



WATER POLLUTION CONTROL AUTHORITY  
for the City of Bridgeport

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WILLIAM E. ROBINSON  
Acting General Manager

January 31, 2017

Alex Rosenberg  
US EPA  
5 Post Office Square, Suite 100 (OES04-04)  
Boston MA 02109-3912

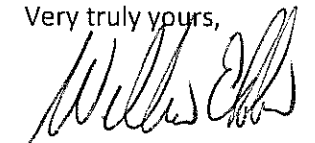
RE: Bridgeport CT WPCA  
US EPA 308 Audit  
Order for Compliance on Consent  
CSO Monitoring Program

Dear Mr. Rosenberg,

We are writing in response to the US EPA Order for Compliance on Consent, specifically Paragraph IV.4 regarding the submission of a Capacity, Management, Operation and Maintenance ("CMOM") Corrective Action Plan ("CAP") to EPA and CT DEEP. Attached for your review and approval please find a copy of said plan.

If you have any questions or desire further information, please do not hesitate to contact me.

Very truly yours,



William E. Robinson  
Acting General Manager

Pc: Ann Straut, CT DEEP  
Atty. L. Hoffman, Pullman & Comley  
File 13100

Attachment No. 3

Statement of Certification

I declare under penalty of perjury that I am authorized to respond on behalf of the City of Bridgeport. I certify that the foregoing responses and information submitted were prepared under my direction or supervision and that I have personal knowledge of all matters set forth in the responses and the accompanying information. I certify that the responses are true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.

By William E. Robinson  
(Signature)

William E. Robinson  
(Printed Name)

Acting General Manager  
(Title)

JANUARY 31, 2017  
(Date)

CITY OF BRIDGEPORT  
WATER POLLUTION CONTROL AUTHORITY  
CORRECTIVE ACTION PLAN

## Introduction

The City of Bridgeport Water Pollution Control Authority operates two advanced secondary wastewater treatment plants and the sewer system within the City of Bridgeport. The West Side Plant has a design flow of 30 mgd and the East Side Plant has a design flow of 10 mgd. The wastewater collection system serves the City of Bridgeport, the southern portion of Trumbull, and small areas of Stratford and Fairfield. Within the City of Bridgeport the collection system consists of approximately 170 miles of sanitary sewers and approximately 113 miles of combined sewers. There are eight wastewater pumping stations as well as metering stations, tide gates, and siphons within the collection system.

As a result of a Request for Information and a subsequent Order for Compliance issued pursuant to Sections 308(a) and 309 (c)(3) of the Clean Water Act, the WPCA has been required to submit a Capacity, Management, Operation, and Maintenance [CMOM] Corrective Action Plan [CAP] to US EPA and CT DEEP. The plan must respond to all items as listed in the Administrative Order on Consent, dated 8/25/16, specifically Paragraph IV.4, Capacity, Management, Operation, and Maintenance Corrective Action Plan and Implementation Schedule.

### 4.a.i Deficiencies identified in the WPCA's CMOM Self-Assessment checklist previously submitted (copy attached)

#### Item II Continuing Sewer Assessment Plan

Question 8 - How do you prioritize investigations, repairs, and rehabilitation? What critical and priority problem areas are addressed more frequently than the remainder of your sewer system? How frequently are these areas evaluated?

Investigations are prioritized jointly with the Contract Operator, the Health Department, and Public Facilities. A list of (currently) 67 sewer segments has been generated. It includes areas that are maintained on a more frequent basis due to their high density of commercial use. These areas are inspected on a regular basis by the field operations crews and the Health Department, which inspects grease traps at all restaurants. Public Facilities actively sweeps all roadway surfaces approximately 6 times a year with additional concentration given to those roadways in the more heavily trafficked areas of the downtown or along commercial corridors. Coordination of activities between WPCA, our Contract Operator, the Health Department and Public Facilities as well as a wealth of experience provides the necessary information required to further investigate, evaluate, maintain, repair, and/or rehabilitate the problems in these areas.

#### Item III.C Collection System Management: Communication and Customer Service

Question 1 – Describe your public education/outreach programs (e.g. for user rates, FOG, extraneous flow, SSOs, etc.)?

The Public Education/Outreach program has been coordinated with our Contract Operator and other departments of the City of Bridgeport. The WPCA has sent out flyers in the billing statements to all of our customers on two occasions in the past five years. These were intended to educate the public on sewer management and the WPCA's Long Term Control Plan. These flyers have also been distributed to the City's Libraries and other public places, and have been posted on the WPCA page of the City's web site. Another flyer is being prepared for distribution to all City employees to involve and educate them on preventing CSOs and how to minimize the contamination of storm water. This will be emailed to all employees and distributed to the City's Libraries and other public places and placed on the City's web site at the end of January 2017. See attachment for Question IV.4.a.1, specifically Item III.C Question 1, for copies of the referenced brochures.

The WPCA has also conducted many tours of our facilities for local schools to educate the students on the importance of protecting Long Island Sound and the environment in general. Currently we are coordinating with three separate schools to tour our facilities in the Spring of 2017.

The WPCA is preparing another informative brochure specifically targeting storm water for distribution in the Spring of 2017. Distribution will be in a similar manner to that previously described.

The City, through a volunteer program, completed a catch basin stenciling program alerting the citizens of the need to restrict the discharge of pollutants into catch basins where the flow would eventually lead to Long Island Sound.

Lastly, the WPCA Board holds monthly meetings which are open to the public. A formal hearing regarding our annual budget is conducted each year. Additionally, copies of the proposed budget are distributed to the Mayor and Common Council, and published in the local newspaper during the annual budget cycle.

With regard to FOG, all establishments are required to obtain a grease trap permit from the Health Department. The WPCA reviews these plans and inspects the installation prior to a Certificate of Occupancy being issued. The Health Department inspects all grease traps on a regular basis.

#### Item VI.B. SSES – Manhole Inspections

Question 1 – Do you have a manhole inspection and assessment program?

We have an informal plan in that when the cleaning and CCTV crews open a manhole, they are trained to assess its condition and report any problems that might require attention.

Question 2 – Has a formal manhole inspection checklist been developed?

A formal checklist has been developed. This checklist will be utilized by the cleaning crew and/or the CCTV inspection crew and includes items such as manhole cover and frame condition, manhole construction (brick or concrete), condition of manhole joints, intrusions (roots and piping), infiltration, and other areas that may require remedial actions. All the deficiencies will be noted in our computer-based program information system. See attachment for Question IV.4.a.i, specifically Item VI.B. Question 2, for a sample of the checklist.

Item IV.4 Responses to Consent Order – Capacity Management Operation and Maintenance Corrective Action Plan and Implementation Schedule

- 4.a.i. CMOM Program Self-Assessment Check List – Please see the earlier portion of this document for our response.
- 4.a.ii. Reassessment of the City's operation and maintenance programs

As a result of the findings made during the March 2016 EPA sewer outfall and sampling inspections, the City (WPCA) has proceeded as follows:

- The WPCA initiated and completed a program to inspect all storm and CSO outfalls during dry weather and sample all areas that were found to have flow. These samples were analyzed for chlorine residual, ammonia, surfactants, and bacteria (fecal, E. Coli, or Enterococcus as applicable) to look for high results which may require further investigation as necessary. The WPCA has begun to sample the remaining storm and CSO outfalls during wet weather to develop a list of outfalls requiring additional investigation. This testing is ongoing; however, due to the lack of precipitation during the summer and fall of this year, progress has been hampered.
- Any samples with high results will be retested and if the results remain high, crews will be dispatched to clean and retest the problem areas. The basic steps to this program are
  1. Inspect all outfalls
  2. Test all storm and CSO outfalls during dry and/or wet weather conditions.
  3. Develop a list of all outfalls where the initial testing results were high.
  4. Retest to confirm the initial results.
  5. Clean, retest, and reevaluate if test results are still high.
  6. Closed circuit TV to determine the source (from parks, residential, illegal/illicit connections, etc.) and implement an action plan to correct the problem if necessary.

4.b. Data Management Support Tools to utilize continuous flow monitoring and outfall inspections.

- The WPCA has entered into an agreement with Arcadis US, Inc. to conduct a 12-month Telemetry Pilot Program (as approved by US EPA) at the following 8 regulators: ANTH, ARBOR, GRAND, HUNT, STRAT, CHUR, WANN, and BAYEL. The pilot program will monitor flow depths.

Ultrasonic down-looking sensors will be used as the primary depth measurement sensor to detect water level above or below the weir. It is anticipated that all of the eight sites will require 2 RTUs to compensate as the distance between the upstream and downstream sensor locations is too great to be wired to one RTU. Each RTU will periodically transmit the data to a website via a cellular data network.

An ARCADIS team will work with the subcontractor, Flow Assessment Services, L.L.C. (Flow Assessment), to install and startup the telemetry sensors, RTUs, transmitters,

website, and systems. The subcontract with Flow Assessment will include monthly maintenance site visits, data reduction tasks, website maintenance, and continuous updating of data presented on the web site.

The installation of this system is complete and it is currently actively monitoring the eight regulators. Data is being tabulated and analyzed. Periodic maintenance is being performed.

As part of this program, ARCADIS will also provide the following services:

- Preparation of QA documentation to ensure the proper installation and troubleshooting of the telemetry system
- Eight person-hours per month to check the website data as it is produced, troubleshoot any problems, solve monitoring problems as they are identified
- Coordination with Flow Assessment staff

#### Annual Report with Comparison of Modeled Results versus Telemetry Overflow Monitoring Data

A report will be prepared by ARCADIS and the WPCA that contains the following:

- A chapter on the setup procedures, troubleshooting issues encountered, and solution used to remedy or repair the problems encountered during the pilot program monitoring period.
- A chapter presenting the results of the telemetry program and how its overflow activation and duration data compared the modeling simulation results for the storms that occurred during the 12 month period when the pilot telemetry monitoring program was conducted.
- A correlation of the overflow activity with the results of the model to verify results.
- Conclusions and recommendations on the telemetry program including forecasted startup costs, anticipated annual maintenance costs, and a benefit to cost ratio.
- A chapter addressing all of the items stated in Section 9 (B) of the WPCA's NPDES permit including:
  - (1) a list of active CSO structures in the system including name/designation, location size of structure and their receiving waters;
  - (2) a list of CSO structures in the system that were closed or inactivated including name/designation, location size of structure and their receiving waters;
  - (3) the date, time, and duration of each precipitation event;
  - (4) the date, time, duration, and estimation of volume based on modeling results for each discharge event for each CSO structure;
  - (5) all CSO inspection forms for the year as provided by the WPCA staff; and
  - (6) a summary of upcoming mitigation efforts for the next three (3) years based upon communications with the WPCA staff.

The telemetry proposal from ARCADIS also includes an optional service for Training and Technical Support.

This optional service would include both generic training in PCSWMM and custom training for the two Bridgeport models which were prepared for the WPCA's LTCP with the following elements:

- Initial generic training shall be provided by Computational Hydraulics International (CHI), the PCSWMM model developers, during one of their regular two-day training sessions either in Canada or the US.
- Custom Training and Support will be provided by ARCADIS Staff in regard to the AWPC East and West Side models which will consist of 40 total hours for the following:
  - In an 8-hour day, ARCADIS staff will demonstrate the WPCA's PCSWMM model capabilities for the East and West drainage area and provide additional hands-on training exercises to address the WPCA staff member's customized needs. Training will also include a tutorial on obtaining and processing rainfall data for use in the model.
  - Subsequent to the formal training, ARCADIS staff will provide 32 additional hours for remote location support from their local office using teleconference, Webex, and/or Teamviewer tools to communicate with the WPCA staff to assist in addressing any outstanding questions.

#### 4.b.i Cleaning Program:

The WPCA has, through the efforts of our Contract Operators, for a minimum of the past 14 years, cleaned over 30 miles of combined and sanitary sewers annually. This rate of 30 miles/year equates to cleaning the entire system at least once every 10 years. Additionally, the WPCA, utilizing its own resources and separate contractors, has undertaken a program to clean and rehabilitate through CIPP technology, major interceptors (>48" diameter) with the primary concentration occurring at the portion of the system serving the West Side WWTP. This portion of our system is geographically larger and, generally, contains the majority of the older and larger diameter interceptors in the system. To date, this effort has resulted in the rehabilitation of 28,500 LF of the system. Additionally, the WPCA is completing design work for another project, consisting of an additional 7000 LF of interceptor, with construction activity anticipated in late 2017.

In order to be able to better document the results of our cleaning and CCTV inspection efforts, the WPCA, with the assistance of our Contract Operator, has determined that the City will be broken into 31 areas as depicted in the Street Guide to Bridgeport, which is a commercially produced reference book. This guide contains 31 detailed maps of the City which our crews will utilize to ensure they work on every street within their designated area before moving to the next area. This will assist the WPCA to document that once all 31 segments have been cleaned and CCTV inspected, the entire system has been completely cleaned and inspected. A copy of the referenced map is included as Attachment IV.4.b.i.

Initially, one cleaning/CCTV crew will be assigned to work full time in a single district until it is complete, at which time they will move to the next. The remaining crews will be assigned to respond to complaints, maintain areas designated as requiring increased cleaning frequency, and responding to weather related incidents. As time permits, these crews will be assigned a separate district to concentrate their non-emergency efforts in a similar fashion as that described above.

## ii. Annual Summary Report

An Annual report will be prepared which will include the total linear feet of the system which was cleaned and/or cleaned and CCTV inspected and referenced to the appropriate map area. This report will also include the results of our catch basin cleaning program. The information gathered will be coded, noting areas of concern. Areas of concern will be addressed by more frequent cleaning, rehabilitation, lining, or replacement as necessary.

## iii. Closed Circuit Television (CCTV) Assessment Program

Using the National Association of Sewer System Companies (NASSCO) procedures by NASSCO Pipeline Assessment Certification Program (PACP) and Manhole Assessment Certification Program (MACP), certified personnel to complete assessment of 100% of the Collection System no later than May 1, 2026.

Closed Circuit TV inspection is performed by trained and qualified personnel to meet the above mentioned requirements of a minimum of 10% of the total sewerage system annually. The pipelines are first cleaned by high pressure jetting of the pipe's interior prior to inserting the camera for TV inspection. The camera is inserted into the piping and videotaped for documentation. The video equipment tracks the linear footage and location of the camera, thereby allowing the exact location of problem areas such as cracks, corrosion, and lateral connections to be determined. As recording is taking place, collection system personnel are documenting all conditions such as manhole cover and frame conditions, manhole construction (brick or concrete), condition of mortared joints, ladder/rung conditions, piping materials, joints, intrusions (roots and piping), infiltration and other issues that may require remedial actions. Not only are these deficiencies noted in the recording, but they are also noted in the crew's daily work order sheets. The computer-based program associated with the camera/video documentation process is entitled IT Pipes.

At the completion of the videotaping, the discs are then reviewed by the WPCA's staff Professional Engineer and the Operations Manager to confirm and further assess infrastructure conditions. A report is then generated by the IT Pipes program that includes photos, linear footage of noted areas of concern, etc. A sample of the information generated by this process is included as Attachment IV.4, specifically 4.b.iii.

The field personnel have many years of experience in the operations and maintenance of sanitary sewage and stormwater collections systems. The majority of the staff has successfully completed the Voluntary Collection Systems Certification Program offered by New England Interstate Water Pollution Control Commission (NEIWPCC). The three-day course, followed by a final exam, encompasses all aspects of the operations and maintenance of the collection system and pumping stations including cleaning, videotaping, troubleshooting, and identifying pipe issues. NEIWPCC uses the curriculum from the California State University at Sacramento Office of Water Programs as their reference and study material. The course is geared for field personnel with two days of classroom training and a half-day of field work. There are four different classifications of licensing offered by NEIWPCC. These are predicated upon the level of experience and the size and complexity of the collection systems. As evidenced by the information provided, the curriculum is quite extensive and covers all aspects of O & M for collection systems and appurtenances.



A copy of the Sacramento Course Curriculum is provided within the Attachment for IV.4, specifically 4.b.iii. The last two pages of this portion of the Attachment provide the grading system used to determine which of the four certification levels the individual has achieved.

Our goal is to have all field personnel involved with the O & M of the collection system achieve a minimum of a Grade II Certification. An on-site training session (the 3-day course previously discussed) is scheduled to be held at our site on February 1-3, 2017. We anticipate this training will enable all field personnel to achieve a Grade II certification.

The NASSCO Pipeline and Manhole Certification programs is similar in nature to what is presently in place and was discussed above. Practices and nomenclature for assessing pipelines and manholes are standard throughout the industry. Dips in pipe, offset joints, cracks, are all common terminology within the trade and are understood by both field and office personnel. NASSCO's program utilizes these terms as categories that are further defined into precise and definitive types, such as Joints, Offset Small, Offset Medium.... and assigning designated abbreviations. For example, when reviewing videos of the collection system, it would be obvious there is an offset joint regardless of whether the NASSCO or the NEIWPCC nomenclature is utilized. Both systems are means of identifying areas of concern and convey analogous meanings. What is important is to effectively communicate the severity of the issue and the need for repair. For example, identifying a "radial crack in pipe at 134 feet starting at 9 o'clock" is exactly the same as identifying it as "CC at 134 feet". Regardless of the nomenclature, the problem is identified and is understood by all concerned parties.

Through years of experience along with formalized training through NEIWPCC and the internal mentoring our the experienced staff, we feel that the staff is presently competent to perform their tasks, including the assessment of system conditions and effectively perform any corrective repair that may be required. We will continue to train the staff in all aspects of their duties to ensure the effective communication of the information insuring continued success in the operations and maintenance of all aspects of the collection systems.

iv. The WPCA believes that by utilizing the methods described in the various portions of this CMOM CAP, the WPCA will be able to generate enhanced Annual reports which will satisfy the reporting and documentation requirements for its collection system. These enhanced reports will be generated for a period of not less than three years. After the submission of the WPCA's third Annual Report, the WPCA and our Contract Operator shall evaluate the effectiveness of the protocols and assignments identified in items 4.C.i and 4.C.ii of the Consent Order and submit a detailed evaluation to the EPA for review. This evaluation will include an assessment of the effectiveness of the preventive maintenance program, including an evaluation of the costs and possible benefits of enhancing the program with abilities such as the following:

1. All data from the Closed Circuit Television (CCTV) assessment program as described in item iii above will be input into the computer program, IT Pipes. This data will then be integrated into the Computer Management and Maintenance System program within 30 days, which will generate work orders to correct any deficiencies within the sewer system.

## B.

## 2. Identifiers

The WPCA and our Contract Operator are confident that the modifications of the manner in which we designate and log our catch basin cleaning program, sewer cleaning program, and our sewer cleaning/CCTV inspection program, as described in the various responses of this CMOM CAP will enable the WPCA to prepare adequately detailed Annual Reports fully documenting our achievements without the need for an extremely expensive and labor intensive system of specific identifiers for each aspect of our collection system. As Bridgeport is a rather poor and disadvantaged community already strapped by high taxes and sewer fees, our available funds are most productively utilized by following the program detailed in this CMOM CAP.

## C. Implementation Schedule

<u>TASK</u>	<u>IMPLEMENTATION DATE</u>
4.a.i CMOM Self-Assessment List	Complete, ongoing
4.a.ii Reassessment of efforts based on March 2016 outfall inspections	Program initiated and ongoing. Weather permitting, sampling should be complete by August 15, 2017. Retesting suspected areas/additional cleaning/inspect/etc. Initiated approximately March 30, 2017. Completed December 31, 2017. Further retesting/inspection continues as needed.
4.b. Needed Data Management Support Tools	
i. Cleaning/CCTV inspection of 10% of system/year until 100% completed.	Program has been in place since at least 2002. Implementing additional mapping to verify completeness of work. Implemented December 1, 2016 and will be continued/enhanced if need be.
ii. Protocol for drafting Annual Summary (see associated narrative)	Implemented.

- |      |   |   |
|------|---|---|
| iii. | CCTV Assessment Program (see associated narratives)   | Program in place since at least 2002. Implementing additional mapping to verify completeness of work. Implemented December 1, 2016. Continue to completion May 1, 2026.                 |
| iv.  | Produce enhanced annual reporting   | Data collection initiated December 1, 2016. Submit 1 <sup>st</sup> report (on activity to December 1, 2017) by March 15, 2018. Continue to report on March 15, 2019 and March 15, 2020. |
|      | Evaluate the effectiveness of the program including evaluation of cost/benefit of the implementation of additional protocols/asset identifiers. | Prepare evaluation of work performed December 1, 2016 through November 30, 2019 and submit by July 1, 2020.   |
|      | Complete cleaning/CCTV inspection of entire system  | May 1, 2026   |

The following schedule applies to the three questions under Paragraph IV (pg 4) of the Administrative Order on Consent

- |   |  |   |
|---|--|---|
| 1 | Response to Item VIII of the Information Request 2016. (Storm Water Management Plan) | Initial response provided October 27, 2016. Update provided on January 15, 2017. Final response due April 15, 2017.                                 |
| 2 | Response to Item IX.c (Outfall Sampling)   | Implemented May 2016. Ongoing throughout the program.   |
| 3 | Implementation of rainfall and CSO simulations (Arcadis US, Inc. Telemetry Program)  | Implementation started in July 2016. First month's data for assessment is November 2016. Ongoing through October 2017. Report by December 31, 2017. |

## .Attachment 4

## United States Environmental Protection Agency, EPA New England

## Wastewater Collection System CMOM Program Self-Assessment Checklist

Apr 08

Name of your system: Bridgeport WPCA Collection System Date: December 2015

Put an "A" in the final column for an issue you intend to address with future action, or leave blank if you have evaluated your program as sufficient.

## I. General Information – Collection System Description

I	Question	Response	*Act
1	How many people are served by your wastewater collection system?	Approximately 175,000 people in Bridgeport, Trumbull, and portions of Stratford and Fairfield	
2	What is the number of service connections to your collection system? How many: Manholes? Pump stations? Feet (or miles) of sewer? Force mains? Siphons?	Bridgeport has approximately 30,000 customers. Number of manholes is unknown. Eight pump stations with force mains. Three major siphons. We have 170 miles of sanitary and 113 miles of combined sewer.	
3	What is the age of your system (e.g., 30% over 30 years, 20% over 50 years, etc.)?	70% +/- is 50 years or older	
4	What type(s) of collection system map is/are available and what percent of the system is mapped by each method (e.g., paper only, paper scanned into electronic, digitized, interactive GIS, etc.)? When the map was last updated?	We have paper mapping of the entire system, which has been scanned. Maps are updated as they change.	
5	If you have a systematic numbering and identification method/system established to identify sewer system manhole, sewer lines, and other items (pump stations, etc.), please describe.	No	
6	Are "as-built" plans (record drawings) or maps available and used by field crews in the office and in the field?	Yes to both questions	
7	Describe the type of asset management (AM) system you use (e.g. card catalog, spreadsheets, AM software program, etc.)	The Bridgeport WPCA uses an Excel spreadsheet to track depreciation of assets. The WPCA uses a straight-line depreciation method with a half year in acquisitions and a half year in dispositions which is in following with GASB 34. The WPCA uses the IRS recommended depreciation rate found in Publication 946.	

## II. Continuing Sewer Assessment Plan

\* Put an "A" in the final column if this is an issue you intend to address with future action.

II	Question	Response	*Act
1	Under what conditions, if any, does the collection system overflow? Does it overflow during wet and/or dry weather? Has your system had problems with: hydraulic issues, debris, roots, Fats, Oils & Grease (FOG), vandalism blockages resulting in manhole overflows, basement backups, other (specify)? Describe your system's history of structural collapses, and PS or force main failures.	<p>Sewer is a combined system subject to CSO events in wet weather.</p> <p>Hydraulic issues are rare. As with most systems we have occasional clogs resulting in backups. Rarely do we overflow onto the street; we do however occasionally backup into basements. All pump stations have been rehabilitated over the last 10 years to minimize issues. For 20+ years we have actively worked to rehabilitate our infrastructure, minimizing structure failures.</p>	
2	How many SSOs have occurred in each of the last three calendar years? What is the most frequent cause?	<p>2013 – no known SSOs</p> <p>2014 – 1 event, I &amp; C issue at a pump station</p> <p>2015 – 5 events caused by blockages</p> <p>Blockages</p>	
3	Of those SSOs, how many basement backups occurred in each of the last three calendar years? How are they documented?	None known. Maintenance Log and Field Reporting.	
4	What is the ratio of peak wet-weather flow to average dry-weather flow at the wastewater treatment plant or municipal boundary for satellite collection systems?	<p>East Side design maximum hydraulic capacity 40 MGD.</p> <p>Over last 30 months average flow is 6.6 MGD</p> <p>West Side design maximum hydraulic capacity 90 MGD.</p> <p>Over last 30 months average flow is 22,2 MGD,</p> <p>(Source: October '15 Monthly Reports)</p>	
5	What short-term measures have been implemented or plan to be implemented to mitigate the overflows? If actions are planned, when will they be implemented?	We aggressively clean and inspect catch basins and sewer lines with required yearly goals of 8500 CBs and 30 miles of sewer cleaned and 30 miles cleaned and CCTVed. Over the past 12+/- years these goals have been exceeded.	
6	What long-term measures have been implemented or plan to be implemented to mitigate the overflows? If actions are planned, when will they be implemented?	We currently have a CSO Long Term Control Plan submitted to the CT DEEP for their approval.	
7	Describe your preventive maintenance program; how do you track it (e.g., card files, electronically, with specific software)?	Preventative Maintenance priorities have been established based on historical trends from call volume and TV Inspections as well as contractual obligations. The work order system tracks the PMs, the Field Operations Manager prioritizes the work and the supervisor of the day assigns the work to the Field Operations crews. Each individual assigned to a job fills out the section of the Work Order report for which they were responsible. The completed work order is entered into the Work Order computer system and a paper copy is retained on file as back up.	
8	How do you prioritize investigations, repairs and rehabilitation? What critical and priority problem areas are	<p>Jointly with Contract Operator on a regular basis.</p> <p>There is a list of (currently) 67 sewer segments that are maintained on a more frequent basis due to a high density</p>	A

\* Put an "A" in the final column if this is an issue you intend to address with future action.

	addressed more frequently than the remainder of your system? How frequent are these areas evaluated?	of commercial traffic, especially restaurants which tend to have a more grease in their discharge, along with other commercial establishments where past experience has indicated the discharge may have a propensity to cause blockages.	
9	Are septage haulers required to declare the origin of their "load"? Are records of these declarations maintained? Do any of the declarations provide evidence of SSOs?	Septage haulers have to document source of load. These records are maintained by the WPCA. Lastly, the records do not provide evidence of SSOs.	

### III.A. Collection System Management Organizational Structure

IIIA	Question	Response	*Act
1	Do you have an organizational chart that shows the overall personnel structure for collection system operations, including operation and maintenance staff? Please attach your chart.	Yes. See attached chart.	
2	For which jobs do you have up-to-date job descriptions that delineate responsibilities and authority for each position?	All	
3	How many staff members are dedicated to collection system maintenance? Of those, how many are responsible for any other duties, (e.g., road repair or maintenance, O&M of the storm water collection system)?	30 None	
4	Are there any collection system maintenance position vacancies? How long has the position(s) been vacant?	There are currently no vacant positions.	
5	For which, if any, maintenance activities do you use an outside contractor?	Paving; Piping buried to a depth greater than 14ft; Repair to greater than 3 lengths of pipe	
6	Describe any group purchase contracts you participate in.	None	

### III.B. Collection System Management: Training

IIIB	Question	Response	*Act
1	What types of training are provided to staff?	Safety, Task Specific, Equipment Training,	
	Is training provided in the following areas: general safety, routine line maintenance, confined space entry, <input type="checkbox"/> MSDS <input type="checkbox"/> lockout/tagout, biologic	Yes  Additional Training: <ul style="list-style-type: none"> <li>• Confined Space</li> <li>• Equipment Operation, (e.g. Boom Truck)</li> </ul>	

\* Put an "A" in the final column if this is an issue you intend to address with future action.

	hazards, traffic control, record keeping, electrical and instrumentation, pipe repair, public relations, SSO/emergency response, pump station operations and maintenance, trench/shoring, other (describe)?	<ul style="list-style-type: none"> <li>Competent Person Training</li> <li>Vendor supplied New Equipment Training</li> <li>CBYD</li> </ul>	
3	Which training requirements are mandatory for key employees?	Competent Person Training; Confined Space Training, Traffic Control Training; Boom Operation Training; New Equipment Training; Any Safety Training with periodic requirements, CBYD	
4	How many collection system employees are certified (e.g, NEWEA certification program) and at what grade are they certified?	25% (Certification not required in Connecticut) Breakdown of Personnel holding licenses 11-II 2-III 1-IV	

### III.C. Collection System Management: Communication and Customer Service

IIIC	Question	Response	*Act
1	Describe your public education/outreach programs (e.g., for user rates, FOG, extraneous flow, SSOs etc.)?	Joint with Contract Operator	A
2	What are the most common collection system complaints? How many complaints have you received in each of the past three calendar years?	Blockages 2013-844 2014-435 2015-731	
3	Are formal procedures in place to evaluate and respond to complaints?	S/T flow chart & WPCA illicit program	
4	How are complaint records maintained (i.e., computerized)? How are complaints tied to emergency response and operations and maintenance programs?	<ul style="list-style-type: none"> <li>Call comes in to dedicated personnel</li> <li>Personnel then <ul style="list-style-type: none"> <li>Documents in the Call Log</li> <li>Enters the call into the computer log</li> <li>Directs information from the call to a Field Operations Supervisor</li> </ul> </li> <li>Supervisor responds and fills out the standardized report form</li> </ul> <p>Information contained in the report is entered into the computer, written report retained as a back up</p>	

### III.D. Collection System Management: Management Information Systems

IIID	Question	Response	*Act
1	How do you manage collection system information? (Commercial software package, spreadsheets, data bases, SCADA, etc). What information and functions are managed	SCADA, Call Logs and Work Order Reports	

\* Put an "A" in the final column if this is an issue you intend to address with future action.

	electronically?		
2	What procedures are used to track and plan collection system maintenance activities?	Wastewater Treatment Service Agreement between WPCA and Severn Trent Environmental Services dated October 2013 ("Agreement").	
3	Who is responsible for establishing maintenance priorities? What records are maintained for each piece of mechanical equipment within the collection system?	Maintenance priorities are on a day-to-day basis, handled by the Field Operations Manager and foreman. Records of all activity are created from the Daily Reports filled out by each crew and stored electronically and in hard copy.	
4	What is the backlog for various types of work orders?	The backlog for various types of work orders is fluid. A running list broken down by various job categories (e.g. Mainline dig, Catch basin, Manhole installation and repair,) is maintained. The jobs are prioritized by the Field Operations Manager and assigned by the supervisor of the day. All work activities are tracked on this list with the exception of sewer line cleaning, for which a separate schedule is maintained.	
5	How do you track emergencies and your response to emergencies? How do you link emergency responses to your maintenance activities?	Each emergency, regardless of it being phoned in or emailed, is entered into the Daily Log by the Field Office Administrator. It and the related foreman and crew reports are both electronically and hard copy stored.	
6	What written policies/protocols do you have for managing and tracking the following information: complaint work orders, scheduled work orders, customer service, scheduled preventative maintenance, scheduled inspections, sewer system inventory, safety incidents, emergency responses, scheduled monitoring/sampling, compliance/overflow tracking, equipment/tools tracking, parts inventory?	S/T SOPs	

### III.E. Collection System Management: SSO Notification Program

III E	Question	Response	*Act
1	What are your procedures, including time frames, for notifying state agencies, health agencies, regulatory authorities, and the drinking water authorities of overflow events?	WPCA tracks and reports all CSO discharge events. Typically, initial notification is within 2 hours with a follow-up report within 5 days. Treatment plant wet weather events are handled by Severn Trent in a similar manner. Collection System overflows are reported by telephone within 2 hours of discovery followed up by a written report.	
2	Do you use the state standard form for recording/reporting overflow events? If not, provide a sample copy of the form that is used.	Yes, we use the State reporting form	

### III.F. Collection System Management: Legal Authority

III F	Question	Response	*Act
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\* Put an "A" in the final column if this is an issue you intend to address with future action.



1	Are discharges to the sewer regulated by a sewer use ordinance (SUO)? Does the SUO contain procedures for controlling and enforcing the following: FOG; Infiltration/ Inflow (I/I); building structures over the sewer lines; storm water connections to sanitary lines; defects in service laterals located on private property; sump pumps?	Discharges are regulated by a Sewer Use Ordinance. FOG procedures were developed after the Ordinance was written and typically are a joint effort between the WPCA and the COB Health Department.  While some structures have been built over existing sewers, these sewers have been lined to increase the length of their service life. Storm water connections and defects in service laterals are controlled by the SUO. Sump pumps are not addressed.	
2	Who is responsible for enforcing various aspects of the SUO? Does this party communicate with your department on a regular basis?	Typically, the WPCA is responsible for enforcement. Various COB Departments (Engineering, Building, etc.) assist as needed.	
3	Summarize any SUO enforcement actions/activities that have occurred in the last three calendar years.	In accordance with the SUO the WPCA conducts, in conjunction with other City of Bridgeport departments, reviews of all proposed site plans, FOG applications, and pursues/corrects any illicit connections found. These enforcement actions have remained consistent over the last three years. Over this period, seven (7) illicit connections have been corrected.	
4	Do you have a program to control FOG entering the collection system? If so, which of the following does it include: permits, inspection enforcement? Are commercial grease traps inspected regularly and who is responsible for conducting inspections?	Yes. Grease traps are required at all commercial establishments by COB Health Department and CT DEEP. WPCA reviews and issues permits, with assistance from COB Engineering. WPCA inspects installation. COB Health Department inspects annually.	
5	Is there an ordinance dealing with storm water connections or requirements to remove storm water connections?	Yes, the SUO	
6	Does the collection system receive flow from satellite communities? Which communities? How are flows from these satellite communities regulated? Are satellite flow capacity issues periodically reviewed?	Yes. We service portions of Trumbull, Fairfield, and Stratford. Stratford and Trumbull typically have a contract. The flow from Fairfield is minimal and direct billed to customers. Periodic review of capacity is conducted.	
7	Does the collection system receive flow from private collection systems? If yes, how is flow from these private sources regulated? How are overflows dealt with?	Only in the sense of a condo association or a public housing complex. Overflows within the private system are the private system owner's responsibility.	

#### IV.A. Collection System Operation: Financing

IV A	Question	Response	*Act
1	Has an enterprise (or other)		

\* Put an "A" in the final column if this is an issue you intend to address with future action.

	fund been established and what does it include: wastewater collection and treatment operations; collection system maintenance; long-term infrastructure improvements; etc.? Are the funds sufficient to properly fund future system needs?	Yes to all questions.	
2	How are rates calculated (have you done a rate analysis)? What is the current sewer charge rate? When was it last increased? How much was the increase?	The sewer user fee is computed during our Annual Budget period. Basically, once the financial requirements are determined the usage is estimated, dividing usage into dollars equals the rate. Currently the rate is \$5.946 per ccf. The F/Y 2013/2014 budget included a \$1.543 per ccf increase. The rate has remained the same since.	
3	What is your O&M budget?	\$1,000,000 year for sewer rehabilitation and additional funding for vehicles as needed.	
4	If an enterprise fund has not been established, how are collection system maintenance operations funded?	N/A	
5	Does a Capital Improvement Plan (CIP) that provides for system repair/replacement on a prioritized basis exist? What is the collection system's average annual CIP budget?	A fixed CIP for the Collection System, other than that proposed in the CSO LTCP, is not developed. See response to IV A.3 also.	
6	How do you account for the value of your system infrastructure for the Government Accounting Standards Board standard 34 (GASB 34)?	The Bridgeport WPCA uses the standard depreciation approach to value its infrastructure assets. This is the most cost effective way in our case.	

#### IV.B. Collection System Operation: Hydrogen Sulfide Monitoring and Control

IV B	Question	Response	*Act
1	Are odors a frequent source of complaints? How many have been received in the last calendar year?	Generally no. Occasionally, especially during extended dry spells we get complaints for odors from catch basins.	
2	Do you have a hydrogen sulfide problem, and if so, do you have corrosion control programs? What are the major elements of the program?	Typically no.	
3	Does your system contain air relief valves at the high points of the force main system? How often are they inspected? How often are they exercised?	Yes, on our Rooster River Pump Station effluent force main. It is inspected annually or as required. It functions each time the station starts up.	

\* Put an "A" in the final column if this is an issue you intend to address with future action.

#### IV.C. Collection System Operation: Safety

IV C	Question	Response	*Act
1	Do you have a formal Safety Training Program? How do you maintain safety training records?	Yes. Computer based and paper files.	
2	Which of the following equipment items are available and in adequate supply: <input type="checkbox"/> rubber/disposable gloves; <input type="checkbox"/> confined space ventilation equipment; <input type="checkbox"/> hard hats, <input type="checkbox"/> safety glasses, <input type="checkbox"/> rubber boots; <input type="checkbox"/> antibacterial soap and first aid kit; <input type="checkbox"/> tripods or non-entry rescue equipment; <input type="checkbox"/> fire extinguishers; <input type="checkbox"/> equipment to enter manholes; <input type="checkbox"/> portable crane/hoist; <input type="checkbox"/> atmospheric testing equipment and gas detectors; <input type="checkbox"/> oxygen sensors; <input type="checkbox"/> H2S monitors; <input type="checkbox"/> full body harness; <input type="checkbox"/> protective clothing; <input type="checkbox"/> traffic/public access control equipment; <input type="checkbox"/> 5-minute escape breathing devices; <input type="checkbox"/> life preservers for lagoons; <input type="checkbox"/> safety buoy at activated sludge plants; <input type="checkbox"/> fiberglass or wooden ladders for electrical work; <input type="checkbox"/> respirators and/or self-contained breathing apparatus; <input type="checkbox"/> methane gas or OVA analyzer; <input type="checkbox"/> LEL metering?	All of the safety equipment listed to the left is available and in adequate supply with the exception of SCBAs. SCBAs are not used by Bridgeport WPCF personnel. Personnel are prohibited from entering IDLH atmospheres per company policy.	

#### IV.D. Collection System Operation: Emergency Preparedness and Response

IV D	Question	Response	*Act
1	Do you have a written collection system emergency response plan? When the plan was last updated? What departments are included in your emergency planning?	Yes. In 2014.	
2	Which of the following issues are considered: <input type="checkbox"/> vulnerable points in the system, <input type="checkbox"/> severe natural events, <input type="checkbox"/> failure of critical system components, <input type="checkbox"/> vandalism or other third party events (specify), <input type="checkbox"/> other types of incidents (specify)?	<p>Severe Natural Events. The system is vulnerable to severe natural event due to its sea level and coastal location.</p> <p>Failure of critical system components. The City of Bridgeport wastewater infrastructure is quite old, however, all pump stations are new or newly refurbished.</p> <p>Vandalism. – Historically this has not been a significant issue, but precautions are taken, particularly with Pump</p>	

\* Put an "A" in the final column if this is an issue you intend to address with future action.

		Stations.	
3	How do you train staff to respond to emergency situations? Where are responsibilities detailed for personnel who respond to emergencies?	On The Job and Vendor Supplied Classroom Training  Personnel Responsibilities are partially driven by the Union Contract	
4	How many emergency calls have you had in the past calendar year?	Approximately 1000 (One Thousand)	

#### IV.E. Collection System Operation: Engineering – Capacity

IV E	Question	Response	*Act
1	How do you evaluate the capacity of your system and what capacity issues have you identified, if any? What is your plan to remedy the identified capacity issues?	The capacity of the collection system was thoroughly investigated during the preparation of our current CSO LTCP. The previously described model of the system was utilized for this analysis.  Other capacity issues are typically minor and are improved by adding short segments of piping or upsizing the existing pipeline diameter.	
2	What procedures do you use to determine whether the capacity of existing gravity sewer system, pump stations and force mains are adequate for new connections? Who does this evaluation?	The service area within the City of Bridgeport is nearly 100% built out. As new development occurs, each is analyzed for capacity impact by the WPCA.	
3	Do you charge hook up fees for new development and if so, how are they calculated?	Yes, a flat rate per connection.	
4	Do you have a hydraulic model of your collection system? Is it used to predict the effects of system remediation and new connections?	Yes, we have a model. Typically it is used to project effects of system remediation. We do not typically use it for new connections.	

#### IV.F. Collection System Operation: Pump Stations - Inspection

IV F	Question	Response	*Act
1	How many pump stations are in the system? How often are pump stations inspected? How many are privately owned, and how are they inspected? Do you use an inspection checklist?	We have 8 stations of various sizes. There is an additional small pump station utilized seasonally to accommodate public use of bathhouses during the warm weather beach season.  They are inspected daily. We know of no privately owned pump stations.  Each pump station has a dedicated logbook	
2	Is there sufficient redundancy of equipment at all pump stations?	We believe so.	
3	How are pump stations monitored? If a SCADA system is used, what	Through daily inspection, SCADA, and back-up telephone alarms. Multiple parameters are monitored, including but not limited to flow, pressure, daily flow, generator status, pump	

\* Put an "A" in the final column if this is an issue you intend to address with future action.

	parameters are monitored?	run time, hi/low alarm etc.	
4	How many pump station/force main failures have you had in each of the last three years? Who responds to pump station/force main failures and overflows? How are the responders notified?	We have not experienced any force main breaks over the last three years. Four of our stations' force mains were replaced within the last 7 years, another 1 has been lined, and another will be lined within a month.  Pump station dedicated supervisor Calls go to dedicated supervisor's mobile phone from public or from the office employee dedicated to taking emergency calls. SOP FS004 Pumping Station Response.	
5	How many pump stations are equipped with backup power sources? How many require portable generators? How many portable generators does your system own? Explain how the portable generators will be deployed during a system-wide electrical outage.	All stations have permanent generators installed.	
6	Are operation logs maintained for all pump stations? Are the lead, lag, and backup pumps rotated regularly?	Yes to all.	
7	Is there a procedure to modify pump operations (manually or automatically) during wet weather to increase in-line storage of wet weather flows?	We have not found this to be required. All pump stations are automatic.	

#### V.A. Equipment and Collection System Maintenance: Sewer Cleaning

V A	Question	Response	*Act
1	What is your schedule for cleaning sewer lines on a system-wide basis? At this frequency, how long will it take to clean the system? How are sewer cleaning efforts documented?	Our Contract Operator is contractually obligated to clean 30 miles/year and clean and CCTV inspect another 30 miles/year, supplemented by separately funded WPCA Capital and CT DEEP CWF rehabilitation projects. We estimate 7-10 years to clean the entire system. In addition, a maintenance log as part of the overall maintenance data system is kept listing areas that tend to clog more frequently than others.	
2	How many linear miles of the collection system were cleaned in each of the past 3 calendar years?	Approximately 180 miles. Please note, lineal feet of areas repeatedly cleaned contribute to the total for every cleaning. In other words, if the same mile of pipe is cleaned 5 times in the same year, that lineal mile would contribute 5 miles to the 30 mile total.	
3	How do you identify sewer line segments that have chronic problems and should be cleaned more frequently? Is a list of these areas maintained and cleaning frequencies established?	Basically, field Operations Manager, Foremen, and WPCA Manager of Treatment and field Operations working together. Line jetting may eliminate a blockage without operators realizing there was a blockage, as a result, blockage may go unaccounted.  A combination of call volume and TV Inspections Yes. The list is incorporated into the call data log.	
4	Approximately, how many collection system blockages	321	

\* Put an "A" in the final column if this is an issue you intend to address with future action.

	have occurred during the last calendar year, and what were the causes?	#1 Grease #2 In general, the second most common cause was customers putting solid items down wastewater lines; specifically rags and baby wipes.	
5	Has the number of blockages increased, decreased, or stayed the same over the past five years?	Decreased due to the significant amount of pipeline lining and replacements of cracked and broken pipes performed by City of Bridgeport WPCA. In addition, there has been a significant increase in the amount of pipe cleaning.	
6	What equipment is available to clean sewers? Is any type of cleaning contracted to other parties? If yes, under what circumstances?	4 Vac trucks are available to our Contract Operator to clean sewers. WPCA separately contracts with others to perform cleaning associated with WPCA Capital and CT DEEP CWF projects	
7	Do you have a root control program? Describe its critical components.	No. Typically not a major concern.	

#### **V.B. Equipment and Collection System Maintenance: Maintenance Right-of-Way**

<b>V B</b>	<b>Question</b>	<b>Response</b>	<b>*Act</b>
1	Is scheduled maintenance performed on Rights-of-Way and Easements? At what frequency? How many manholes in easement areas can not be located?	Yes. Routine maintenance is performed as part of our cleaning/maintenance program. All known manholes are located.	
2	Are road paving projects coordinated with the collection system operators. Are manholes paved over? How many manholes in paved areas can not be located? Describe any systems in place for locating and raising manholes that have been paved over.	Yes. Paving operations are coordinated with COB paving operations. Typically, manholes are not paved over. We have metal detectors, pipe locations, and CCTV available in the event a manhole is found covered and has to be uncovered.	

#### **V.C. Equipment and Collection System Maintenance: Parts Inventory**

<b>V C</b>	<b>Question</b>	<b>Response</b>	<b>*Act</b>
1	Do you have a central location for the storage of spare parts?	Yes.	
2	How have critical spare parts been identified?	Historical Trends	
3	How to you determine if adequate supplies on hand? Has an inventory tracking system been implemented?	One dedicated employee maintains a list of materials such as pipe, manhole covers, fittings, ect. An inventory list is manually maintained with the dedicated employee manually adding and subtracting to the list as inventory is used or restocked	

#### **VI A. SSSES: System Assessment**

<b>VI A</b>	<b>Question</b>	<b>Response</b>	<b>*Act</b>
1	Do POTW flow records or	As discussed in our CSO LTCP and in the response to the	

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	prior I/I or SSES programs indicate the presence of public/private inflow sources or sump pumps? Please explain.	308 Audit Attachment #2, I/I is not a major concern in our system. That being said, when I/I is found, it is addressed.	
2	If problems are related to I/I, has a Sewer System Evaluation Survey (SSES) been conducted? When? What is the status of the recommendations?	See response to VI A 1 above.	
3	Do you have a program to identify and eliminate sources of I/I into the system including private service laterals and illegal connections? If so, describe.	We have an active Illicit Connection elimination program as described in the response to Question III C 3 and in the response to the 308 Audit Attachment 2. As service laterals are the responsibility of the property owner, this can become a difficult item. Typically it is not a major issue to date.	
4	Have private residences been inspected for sump pumps and roof leader connections?	Sump pumps: No. Per COB Ordinance the roof leaders are to be connected to the storm system or if none is available, to the combined sewer.	
5	Are inspections to identify illicit connections conducted during the property transfer process?	No they are not.	
6	How many sump pumps and roof leaders have been identified? How many have been removed?	See response to VI A 4 above.	
7	Have follow-up homeowner inspections been conducted?	N/A	
8	What incentive programs exist to encourage residences to disconnect roof leaders & sump pumps? i.e. matching funds, etc.	Currently there is no program of this nature.	
9	What disincentive programs exist to encourage residences to disconnect roof leaders & sump pumps? i.e. fines, surcharges	Currently there is no disincentive program.	

#### VI.B. SSES: Manhole Inspection

VI B	Question	Response	*Act
1	Do you have a manhole inspection and assessment program?	We have an informal program.	A
2	Has a formal manhole inspection checklist been developed?	Not as of this time.	A
3	How many manholes were inspected during the past calendar year?	Approximately 2500. Manholes are always inspected during pipeline work but there is no formal inspection program. The WPCA is preparing its first manhole rehabilitation contract which involve approximately 21 manholes. This will allow future evaluation.	

\* Put an "A" in the final column if this is an issue you intend to address with future action.

## VII. Energy Use

VII	Question	Response	*Act
1	What is your annual energy cost for operating your system? For which pieces of equipment do you track energy use?	For the Collection System we used \$17,855 in electricity and \$4,267.54 in natural gas.	
2	Have you upgraded any of your pumps and motors to more energy efficient models? If so, please describe.	We standardized our pump stations to incorporate a submersible pump application in a dry pit. While not the most energy efficient, it provides the greatest protection against potential damage from flooding. We have incorporated energy efficient lighting and HVAC equipment.	
3	Have you performed an energy audit in the past three years?	For the treatment plants, yes; collection system, no.	
4	Where do you use the most energy (fuel, electricity) in operating your collection system?	Natural gas for the emergency generators and electricity for pump operation at the pump stations.	
5	If you have a treatment plant, would you be interested in participating in EnergyStar benchmarking of your treatment plant?	Yes, we are planning to include this in our next upgrade.	

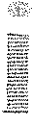
## VIII. Other Actions

VIII	Question	Response	*Act
1	Describe any other actions that you plan to take to improve your CMOM Program that are not discussed above.	No, the above list is quite thorough.	

\* Put an "A" in the final column if this is an issue you intend to address with future action.



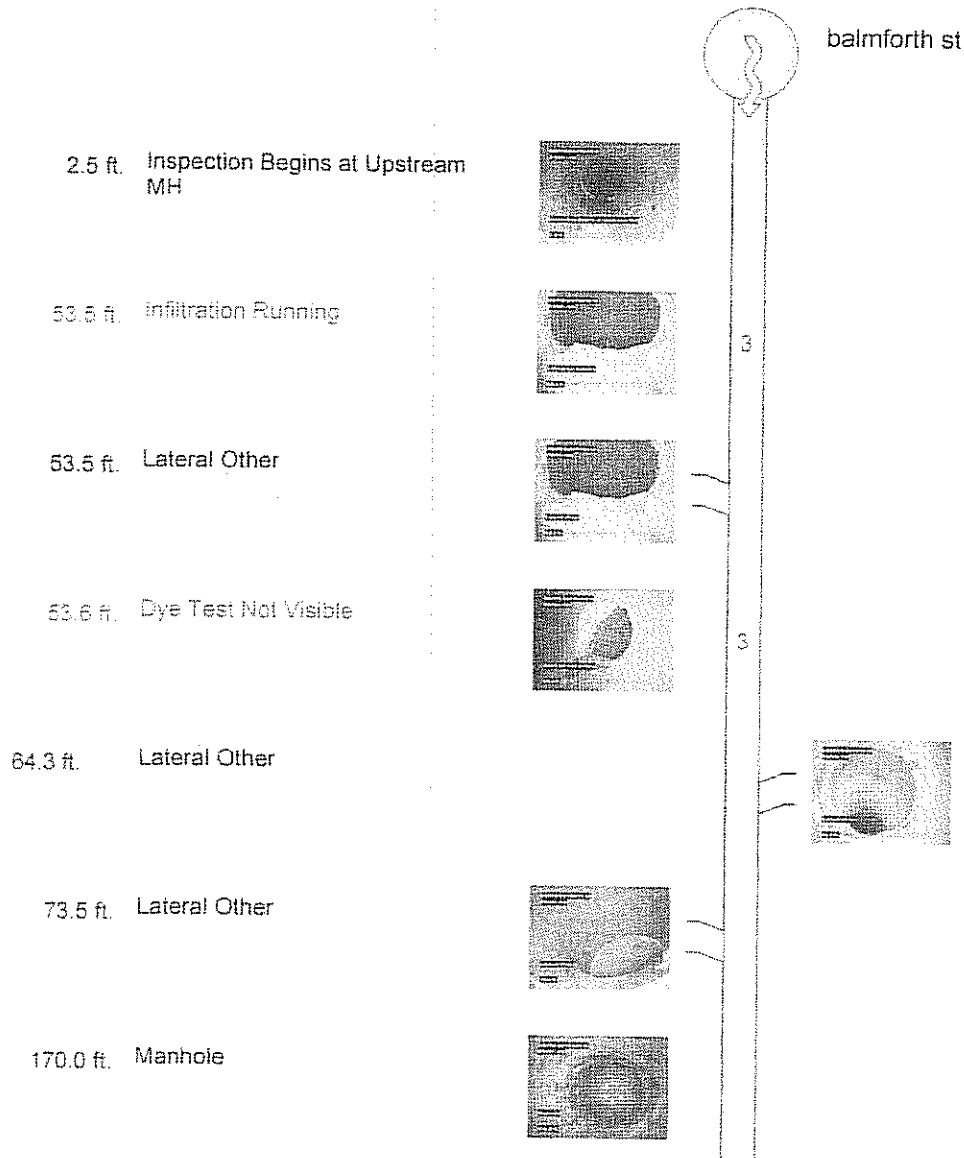
**ATTACHMENT FOR IV.4, SPECIFICALLY 4.b.iii**



Bridgeport  
595 Seaview Ave  
Bridgeport Ct. 06607  
203-576-7171

### Defect Listing Plot with Images

Pipe ID	City	Street	Shape	Map #1	Basin
Start	Bridgeport	pearsall pl	Circular		
balmforth st	Section Length	Operator	Material	Section Type	
End	Inspected Length	Diameter	VCP	Storm Water	
mh	482	12	6.4	Depth DS	Joint Length
Media #	Cleaned	Not Known	Inspection Dir	Reason	
Date	20160405	Clean Date	Downstream	General Condition Control	
			Wastes	Remark	
			Clear Dry		
Flow Control	Customer	Truck	Info		
Not Controlled					
	Present		Camera		
QSR	SPR	Tally_1			
		N/A			



## Defect Listing Plot with Images

Pipe ID	City	Street	Shape	Map #1	Basin
	Bridgeport	pearsall pl	Circular		
Start	Section Length	Operator	Material	Sector Type	
balmforth st		Carlos	VCP	Storm Water	
End	Inspected Length	Diameter	Depth MH	Depth DS	Joint Leng. Height
mh	482	12	6.4		

Media #	Cleaner	Inspector On	Reason
	Not Known	Downstream	General Condition Control
Date	Clean Date	Weather	Remark
20160405		Clear Dry	
Flow Control	Customer	Truck	Info
Not Controlled			
Present		Camera	
QSR	SPR	Tally_1	
		N/A	

174.0 ft. Infiltration Running



174.0 ft. Lateral Other



182.2 ft. Lateral Other



205.2 ft. Lateral Other



261.5 ft. Lateral Other



482.0 ft. Inspection Ends at Downstream MH



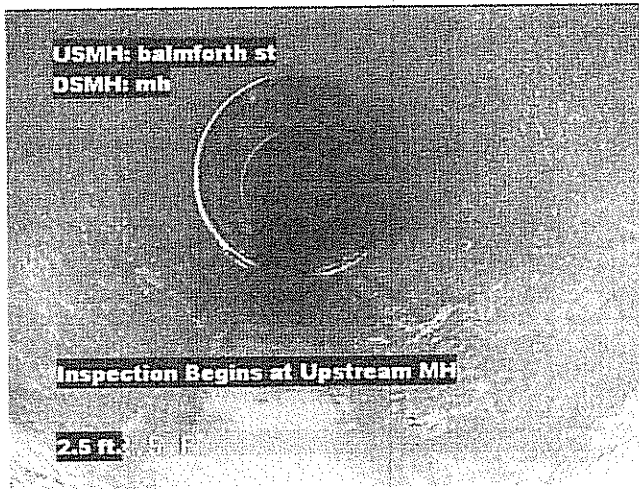
end run at #166



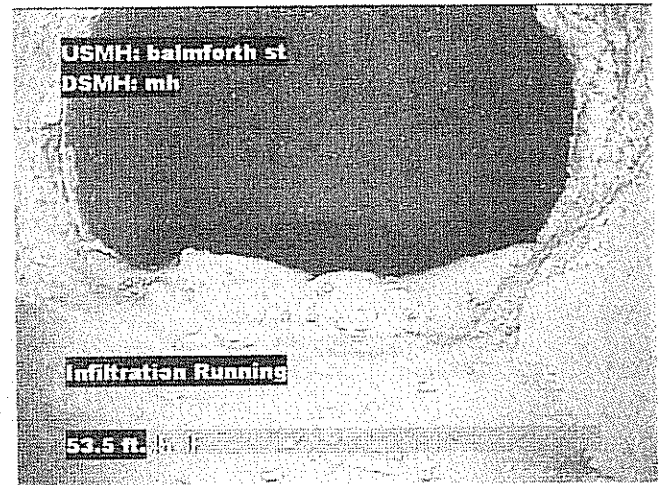
mh

# Image Report 4/Page

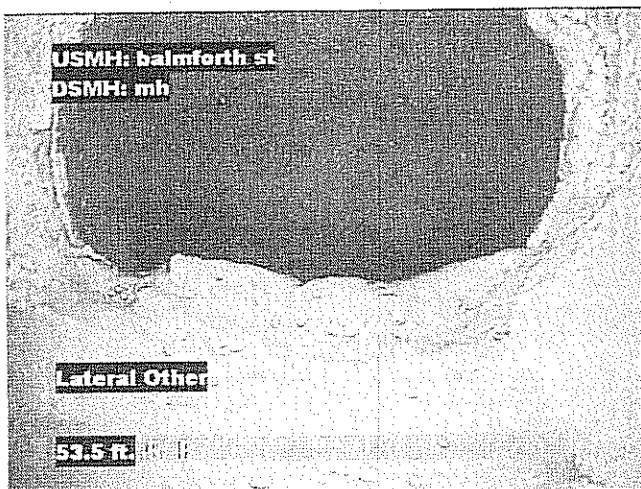
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	Bridgeport	pearsall pl	Circular		
Start	Section Length	Downer	Material	Section Type	
balmforth st		Carlos	VCP	Storm Water	
End	Inspected Length	Diameter	Depth MH	Depth DS	Joint Leng.
mh	482	12	6.4		Height



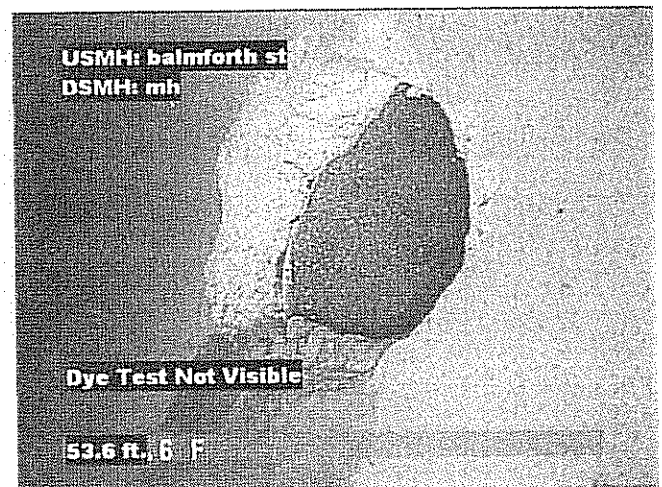
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Remarks: N/A



Distance: 53.5 ft. Grade: 3  
Condition: Infiltration Running  
Remarks: N/A



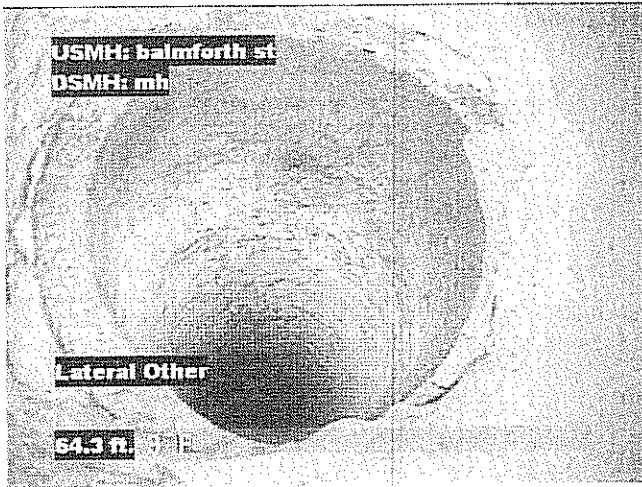
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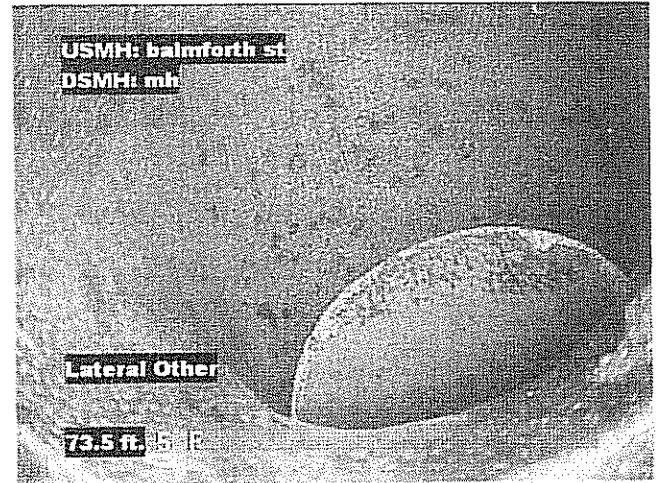
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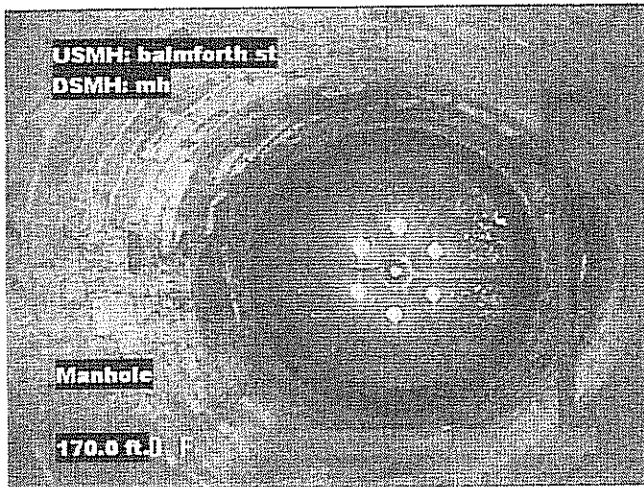
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	Bridgeport	pearsall pl	Circular		
Start	Section Length	Inspector	Material	Section Type	
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End	Inspected Length	Diameter	Depth MH	Depth DS	Joint Leng.
mh	482	12	6.4		Height



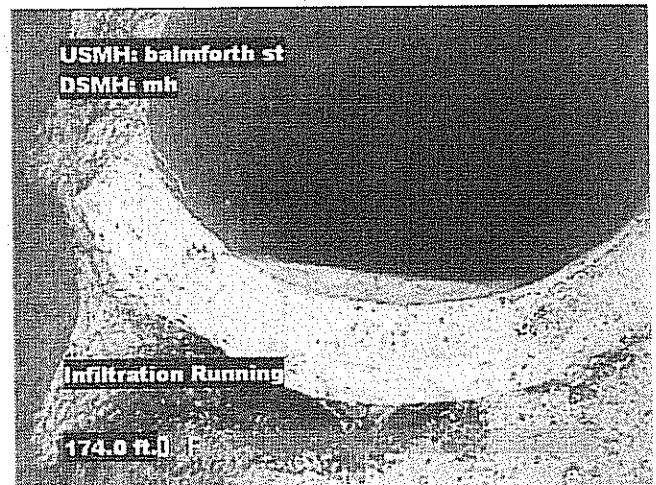
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Remarks: N/A



Distance: 73.5 ft. Grade: N/A  
Condition: Lateral Other  
Remarks: N/A



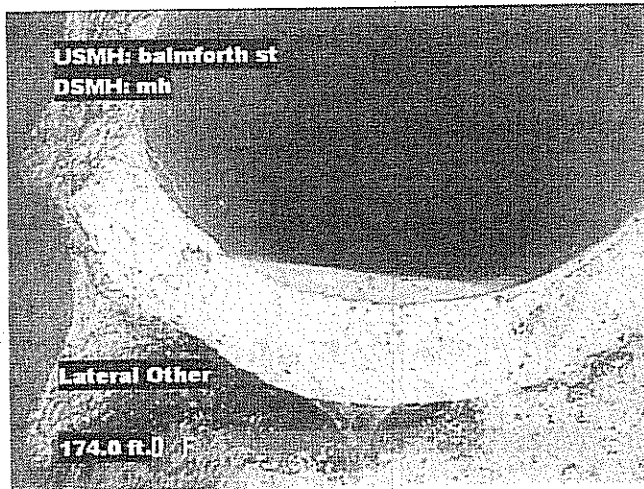
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Remarks: N/A



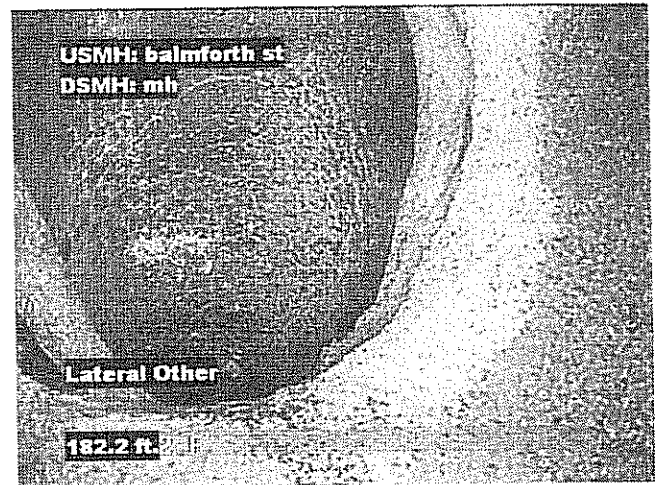
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Condition: Infiltration Running  
Remarks: N/A

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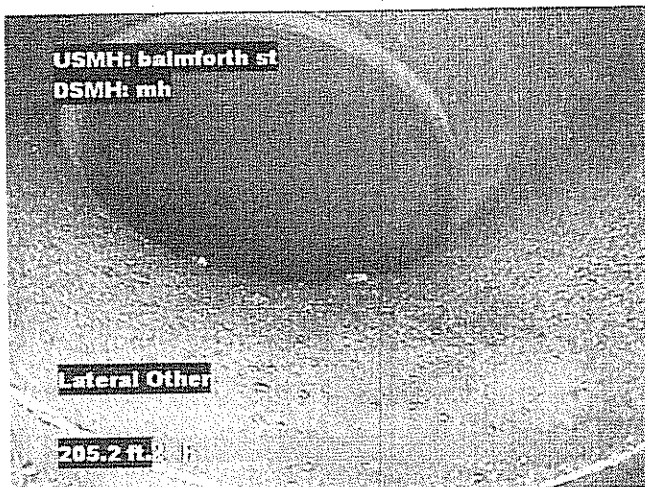
Pipe ID	City	Street	Shape	Map #1	Basin
	Bridgeport	pearsall pl	Circular		
Start	Section Length	Operator	Material	Section Type	
balmforth st		Carlos	VCP	Storm Water	
End	Inspected Length	Diameter	Depth MH	Depth DS	Joint Leng...
mh	482	12	6.4		Height



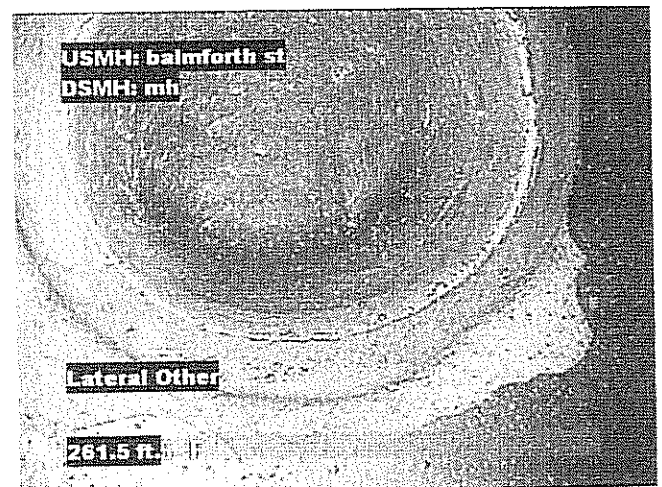
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 Condition: Lateral Other  
 Remarks: N/A



Distance: 182.2 ft. Grade: N/A  
 Condition: Lateral Other  
 Remarks: N/A



Distance: 205.2 ft. Grade: N/A  
 Condition: Lateral Other  
 Remarks: N/A



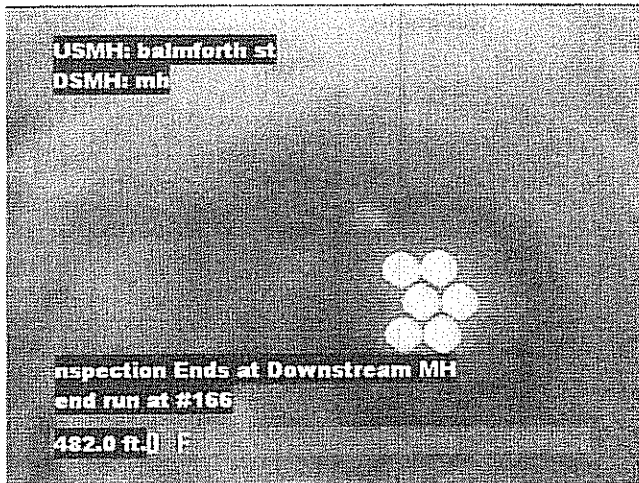
Distance: 261.5 ft. Grade: N/A  
 Condition: Lateral Other  
 Remarks: N/A



Bridgeport  
695 Seaview Ave  
Bridgeport Ct. 06607  
203-576-7171

## Image Report 4/Page

Pipe ID	City	Street	Shape	Map #1	Basin
Start	Bridgeport	pearsall pl	Circular		
balmforth st	Section Length	Corridor	Material	Section Type	
End		Carlos	VCP	Storm Water	
mh	Inspected Length	Diameter	Depth MH	Depth DS	Joint Leng...
	482	12	6.4		Height



Distance: 482.0 ft. Grade: N/A  
Condition: Inspection Ends at Downstream MH  
Remarks: end run at #166



## Project Information

Project Name: pearsall pl 4-5-16	Project Number:	Date:
-------------------------------------	-----------------	-------

Contractor	Bridgeport
Responsible:	
Department:	
Street:	695 Seaview Ave
City:	Bridgeport
Telephone:	203-576-7171
Fax:	
Mobile:	
E-Mail:	

Notes:



## Defect Listing

Pipe ID	City	Street	Shape	Map #1	Basin
Start	Bridgeport	pearsall pl	Circular		
balmforth st	Section Length	Operator	Material	Section Type	
End	Inspected Length	Carlos	VCP	Storm Water	
mh	482	Diameter	Depth MH	Depth DS	Joint Leng...
		12	6.4		Height
Media #	Cleaned	Not Known	Inspection Dir	Reason	
Date	20160405	Clean Date	Downstream	General Condition Control	
			Weather	Remark	
			Clear Dry		
Flow Control	Customer	Truck	Info		
Not Controlled					
Present		Camera			
QSR	SPR	Tally_1			
		N/A			

Distance	Condition	Cont. Dfct.	Values			Joint	Clock Position		Grade
			1st	2nd	%		At/From	To	
2.5 ft.	Inspection Begins at Upstream MH					<input type="checkbox"/>			
53.5 ft.	Infiltration Running					<input type="checkbox"/>	2	3	3
53.5 ft.	Lateral Other					<input type="checkbox"/>	3		
53.6 ft.	Dye Test Not Visible					<input type="checkbox"/>			3
64.3 ft.	Lateral Other					<input type="checkbox"/>	9		
73.5 ft.	Lateral Other					<input type="checkbox"/>	3		
170.0 ft.	Manhole					<input type="checkbox"/>			
174.0 ft.	Infiltration Running					<input type="checkbox"/>	2	4	3
174.0 ft.	Lateral Other					<input type="checkbox"/>	3		
182.2 ft.	Lateral Other					<input type="checkbox"/>	9		
205.2 ft.	Lateral Other					<input type="checkbox"/>	9		
261.5 ft.	Lateral Other					<input type="checkbox"/>	9		
482.0 ft.	Inspection Ends at Downstream MH					<input type="checkbox"/>			
Remarks: end run at #166									

## Operation and Maintenance of Wastewater Collection Systems, Volume I, Chapter 1, Introduction to Wastewater Collection

1. Explain the type of work done by collection system operators.
2. Describe where to look for jobs in this profession.
3. Outline how to learn or determine procedures necessary to perform the collection system operator's job.
4. Describe the challenges of wastewater collection system operation and maintenance.
5. Justify the need for wastewater collection system operation and maintenance.
6. Outline what wastewater collection system operators are expected to achieve and what skills and knowledge they must possess.

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## Operation and Maintenance of Wastewater Collection Systems, Volume I, Chapter 2, Wastewater Collection Systems

1. List the parts of a wastewater collection system and explain the purpose of each part.
2. Communicate to design engineers the need to consider preventing operation and maintenance problems when designing collection systems.
3. Identify sources and calculate quantities of wastewater flow.
4. Estimate the velocity of water flowing in a sewer.
5. Review plans and specifications for wastewater collection systems from the viewpoint of effective operation and maintenance of collection systems.

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## Operation and Maintenance of Wastewater Collection Systems, Volume I, Chapter 3, Safe Procedures

1. Demonstrate an awareness of collection system hazards and a commitment to accomplish every task in a safe manner.
2. Inspect safety features of vehicles and equipment.
3. Drive vehicles defensively and safely.
4. Work safely in streets.
5. Protect road users and pedestrians from work areas in streets and sidewalks.
6. Understand the proper use of temporary traffic control (TTC) zone devices.
7. Identify and reduce confined space hazards by using the appropriate equipment and procedures when working in or around such areas.
8. Analyze the features and suitability of various atmospheric test/alarm instruments for use in the collection system environment.
9. Work in excavations safely.
10. Avoid electrical hazards.
11. Protect yourself from excessive noise.
12. Extinguish fires.
13. Interpret and comply with OSHA's Hazard Communication Standard and worker Right-To-Know laws.

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## Operation and Maintenance of Wastewater Collection Systems, Volume I, Chapter 4, Inspecting and Testing Collection Systems

1. Inspect existing sewers for operation and maintenance problems.
2. Inspect new sewers and replacement sewers for installation as planned by examining line and grade, joint and junction adequacy, and proper installation of manholes and appurtenances.
3. Test for leaks in joints, taps, sewers, and manholes of existing facilities.
4. Find illegal, unauthorized, or improper connections.
5. Locate and determine the seriousness of inflow, infiltration, exfiltration, and diversion flow problems.
6. Identify and evaluate damage due to corrosion, cracking, crushing, subsidence (soil settling), root intrusion, stoppages, washouts, and improper connections.
7. Provide meaningful reports to supervisors so they can assign priorities in order to develop cost-effective maintenance or corrective action programs.
8. Effectively use the inspecting and testing tools and procedures described in this chapter, including closed-circuit television and electro scanning inspection, and smoke and dye testing.

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## Operation and Maintenance of Wastewater Collection Systems, Volume I, Chapter 5, Pipeline Cleaning and Maintenance Methods

1. Identify types and causes of sewer stoppages.
2. Select proper methods to clear stoppages and clean sewers.
3. Determine equipment and staffing requirements for various sewer clearing and cleaning methods.
4. Set up sewer clearing and cleaning equipment safely and properly.
5. Operate and maintain sewer clearing and cleaning equipment safely and effectively.
6. Clean sewers without flooding homes and basements.
7. Record essential data regarding clearing and cleaning operations.
8. Direct sewer clearing and cleaning operations using high-velocity cleaners, power rodders, hand rods, bucket machines, and sewer scooters.
9. Establish a preventive maintenance program for sewer cleaning equipment.
10. Develop a program to control odors.

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## Operation and Maintenance of Wastewater Collection Systems, Volume I, Chapter 6, Underground Repair and Construction

1. Safely repair or construct sewer lines and manholes.
2. Contact utility agencies with underground facilities near a construction or repair project before excavation starts.
3. Determine and check pipeline grade.
4. Raise a manhole frame and cover to grade.
5. Repair and install manhole bottoms.
6. Excavate, repair, and backfill service lines and main lines.
7. Describe the duties of a wastewater collection system construction inspector.
8. Inspect a sewer under construction for proper bedding materials and construction, pipe laying procedures, and backfilling and compaction.
9. Test the ability of a wastewater collection system to withstand inflow/infiltration.

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## Operation and Maintenance of Wastewater Collection Systems, Volume II, Chapter 8, Lift Stations

Following completion of Chapter 8, students should be able to:

1. Determine the locations of lift stations.
2. Describe the requirements of a lift station.
3. Discuss the components of a lift station.
4. Indicate the advantages and disadvantages of the different types of controllers.
5. Review lift station prints and specifications.
6. Inspect a new lift station.
7. Keep a lift station operating as intended.
8. Determine the frequency of visits to a lift station.
9. Perform necessary lift station maintenance tasks.
10. Prepare record forms for a lift station, complete them, and file them.

Lift stations or pumping stations lift wastewater to a higher elevation when the continuance of the sewer at reasonable slopes would involve excessive depths of trench, or when the wastewater must be raised from areas too low to drain into available sewers. The most desirable operation of a lift station is the situation in which all the flow and solids that discharge into the wet well from the gravity sewer are lifted to the higher elevation and continue to the wastewater treatment plant without delay.

This chapter discusses the components of a lift station, including the wet well, control systems, pumps, ventilation, and auxiliary equipment. How to inspect and place a new lift station into service is very important. After the station is placed on line, the station must be properly operated and a preventive maintenance program must be implemented. Frequency of visits to lift stations depends on operating conditions of the station; potential damage that could result from lift station failure; condition of the equipment; effectiveness of the preventive maintenance program; and type, adequacy, and reliability of the telemetry system.

Proper lift station maintenance is critical to minimizing lift station failures and odor complaints from the public. Accurate and useful records must be kept of all pertinent lift station data including costs, operating procedures, maintenance, unscheduled repairs, and modifications.

The supplement to this chapter presents a typical lift station book describing the maintenance and overhaul procedures for an actual lift station.

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## Operation and Maintenance of Wastewater Collection Systems, Volume II, Chapter 9, Equipment Maintenance

Following completion of Chapter 9, students should be able to:

1. Explain the serious consequences that could occur when inexperienced, unqualified, or unauthorized persons attempt to troubleshoot or repair electrical panels, controls, circuits, wiring, or equipment.
2. Communicate with electricians by indicating possible causes of problems in electrical panels, controls, circuits, wiring, and motors.
3. Properly select and use the following pieces of equipment (if qualified and authorized):
  1. Multimeters
  2. Ammeters
  3. Meggers
  4. Ohmmeters
4. Describe how a pump is put together.
5. Discuss the application or use of different types of pumps.
6. Maintain the various types of pumps.
7. Operate and maintain a compressor.
8. Develop and conduct an equipment lubrication program.

Effective equipment maintenance is very important to the successful operation of a wastewater collection system. Pumps in lift stations, as well as pumps used in the field and pumps on high-velocity cleaners, must be included in a preventive maintenance program. Other equipment in lift stations and used by field crews must be maintained to keep the equipment in operating condition and to ensure that the equipment does not wear out too fast.

Maintenance of electrical equipment requires extra caution and special training and skills. Do not attempt to install, troubleshoot, maintain, repair, or replace electrical equipment, panels, controls, wiring, or circuits unless you:

1. Know what you are doing
2. Are qualified
3. Are authorized

All students, instructors, and experienced operators must realize the hazards involved when working with or near electricity and never take a chance. Special procedures are outlined for troubleshooting. This chapter contains tables and lists on how to identify problems, how to look for possible causes of problems, and how to remedy or solve the problem once it has been identified. Topics covered include electrical equipment maintenance, pumps, compressors, and equipment lubrication.

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## Operation and Maintenance of Wastewater Collection Systems, Volume II, Chapter 10, Sewer Renewal (Rehabilitation)

Following completion of Chapter 10, students should be able to:

1. Evaluate the condition of a sewer.
2. Determine the need for sewer renewal (rehabilitation).
3. Establish priorities for a sewer renewal (rehabilitation) program.
4. Identify the various sewer renewal (rehabilitation) methods.
5. Select the appropriate sewer renewal (rehabilitation) method.
6. Implement and complete a renewal (rehabilitation) project.
7. Notify and cooperate with the public during a renewal (rehabilitation) project.

This chapter stresses the need for and importance of a sewer renewal (rehabilitation) program. Collection system agencies must have a program that determines and evaluates the existing conditions in sewers and establishes priorities for rehabilitation. The alternative methods of rehabilitation are presented and discussed.

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## Operation and Maintenance of Wastewater Collection Systems, Volume II, Chapter 11, Safety/Survival Programs for Collection System Operators

Following completion of Chapter 11, students should be able to:

1. Demonstrate their awareness of the hazards of working in the collection system environment by performing their assigned duties safely.
2. Identify potential and existing hazards.
3. Develop and establish a safety/survival program.
4. Outline the objectives and benefits of a safety/survival program.
5. List the responsibilities of the different staff levels in a collection system agency that are responsible for a safety/survival program.
6. Prepare and conduct tailgate safety sessions and monthly safety meetings.
7. Develop and implement appropriate safety/survival program policies.
8. Accurately complete accident forms and properly maintain records.

A review of the safe procedures presented in this manual is summarized in this chapter. Emphasis is placed on the philosophy of safety and the fact that all procedures must be developed and learned as safe procedures. Therefore, if at all possible, all safety procedures should be learned by actual hands-on application of the procedures. The topics are presented in such a manner to encourage the use of the material to develop short, informal, tailgate safety sessions.

Topics covered include the testing of the atmospheres in sewers for toxic gases, explosive conditions, and lack of oxygen. Safe driving is important on the job as well as off the job. Traffic must be safely routed around a job site before work starts. Cave-ins are a serious hazard to collection system operators. Their causes must be identified and proper shoring must be selected, installed, maintained, and removed.

A basic first-aid class should be completed by all crew members. Once safe procedures are learned, the collection system operator should be able to prepare and present effective safety programs.

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## Operation and Maintenance of Wastewater Collection Systems, Volume II, Chapter 12, Administration

Following completion of Chapter 12, students should be able to:

1. Explain the need for effective administration.
2. Develop the goals, tasks, and procedures for an operating plan.
3. Prepare and justify staffing and equipment requirements for their program.
4. Determine whether a piece of equipment should be leased or purchased.
5. Hire new operators.
6. Administer their agency's safety program.
7. Determine the facility requirements for their program.
8. Read the various types of maps used by collection system operators.
9. Explain the importance of and need for maps.
10. Keep maps up to date.
11. Determine the management information system requirements for their program.
12. Prepare and maintain records essential for budgeting, scheduling, and meeting legal requirements.
13. Write an informative report.
14. Organize an effective public relations program for their agency.

How to properly administer a wastewater collection system agency is the main topic of this chapter. Emphasis is placed on the day-to-day operation of the collection system agency.

Accurate maps must be available to collection system crews so they can operate and maintain the collection system. Crews must be able to determine the location of manholes and sewers in order to maintain the facilities and correct problems. Maps must be kept up to date.

Important information must be recorded and filed for future reference and use. Records are especially important for the preparation of budgets and personnel and equipment requests. Whenever legal action is threatened, accurate records can be very helpful. Collect only the information needed and file it in a manner that makes it easy to find in a readily accessible location.

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## Operation and Maintenance of Wastewater Collection Systems, Volume II, Chapter 13, Organization for System Operation and Maintenance

Following completion of Chapter 13, students should be able to:

1. Organize an agency to operate and maintain a wastewater collection system.
2. Identify functions and work activities of essential units within an agency.
3. Staff and equip essential units within an agency.
4. Develop priority lists for job assignments for units within an agency.
5. Describe the various types of equipment maintenance programs.
6. List the factors that influence an equipment maintenance program.
7. Develop and implement an equipment maintenance program.
8. Schedule the collection system activities of an agency.
9. Evaluate the performance of the collection system and agency.

Confronted with scarce resources of personnel and funds, wastewater collection system agencies must be organized as efficiently as possible. The agency must be organized to produce a comprehensive program that minimizes problems and service requests or complaints. To work effectively, this program must identify the potential problems and, if possible, correct the problems. Such an organization and maintenance program will minimize the development of a nuisance or a public health hazard, but some will develop through no fault of the system due to accidents or disasters that may occur. With the minimization of problems, the taxpayers of the community will be assured that they are receiving excellent service from the wastewater collection system agency. A collection system agency should be organized to respond to various types of problems or complaints that develop and also to attempt to prevent these problems or complaints from occurring. Sections or units within an agency could include emergency service, preventive maintenance, collection system repair and new construction, lift station operation and mechanical maintenance, and an industrial waste section.

Key factors that influence the size and organization of a wastewater collection system agency include the size of the community and area served, topography, population, industrial activity, construction practices, soil conditions, type of materials, age of facilities, adequacy of construction inspection, enforcement of sewer-use ordinances, and effectiveness of past maintenance programs.

Organization charts are helpful to show the overall organization of a municipality and the detailed organization of the collection system. Charts also show the chain of command or flow of authority in an agency to meet the responsibilities of the agency. An effective organization collects good records and reviews and evaluates the effectiveness of equipment and programs in order to develop improved standards and procedures.

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## Operation and Maintenance of Wastewater Collection Systems, Volume II, Chapter 14, Capacity Assurance, Management, Operation, and Maintenance (CMOM)

Following completion of Chapter 14, students should be able to prepare and implement a CMOM program for their collection system utility. The CMOM program should contain elements on how to:

1. Manage a collection system.
2. Enforce their legal authority.
3. Administer their utility's finances.
4. Recruit and motivate personnel.
5. Promote training and certification.
6. Support the safety program.
7. Maintain warehouse and inventory.
8. Design collection system facilities.
9. Construct and inspect facilities.
10. Perform a sewer system evaluation survey (SSES).
11. Conduct a system capacity assurance program.
12. Supervise and evaluate a water quality monitoring program.
13. Schedule maintenance.
14. Manage a collection system O&M program.
15. Supervise a sewer cleaning program.
16. Control and monitor hydrogen sulfide.
17. Operate and maintain lift stations.
18. Inspect and rehabilitate manholes.
19. Televisive collection system sewers.
20. Reduce infiltration/inflow (I/I).
21. Conduct smoke testing and dyed water flooding.
22. Repair and rehabilitate sewers.
23. Maintain right-of-ways.
24. Minimize SSOs and CSOs.
25. Comply with their NPDES permit and applicable rules and regulations.

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## CLASSIFICATION OF WASTEWATER COLLECTION SYSTEMS - Point System

The Certification Committee shall, from time to time, classify all Collection Systems into four grades based on the size and complexity of a point system as indicated below.

The point system is based on the 11 areas described below and will determine your grade level eligibility:

Grade I	1 - 20
Grade II	21 - 39
Grade III	40 - 55
Grade IV	55 - >

1	Largest Pipe Size	Points	Max. No. of Points
	a. Up to 42"	3	6
	b. Greater than 42"	6	
2	Average Total Flow MGD	Points	Max. No. of Points
	a. 0 - 0.10	1	*Extra 2 pts. for industrial flow in excess of 20% of total flow.
	b. 0.10 - 0.40	2	
	c. 0.40 - 0.70	3	
	d. 0.70 - 1.00	4	
	e. 1.0 - 5.00	5	
	f. 5.0 - 10.00	6	
	g. 10.0 - 20.00	7	
	h. 20.0 - 50.00	8	
	i. 50.0 - 100.00	9	
	j. >100.0	10	
			12
3	Total Miles of Sewer Sanitary & Combined. Do not include storm sewers.		
	a. 0 - 10	2	
	b. 10 - 20	4	
	c. 20 - 50	6	
	d. 50 - 100	8	
	e. 100>	10	10
4	Pump Stations Under Control of Collection Systems Operators		
	a. Standby power	2	
	b. Dry well station	2	
	c. Wet well station	2	
	d. Grit removal	1	
	e. Comminution	1	
	f. Bar rack	1	
	g. Aeration	1	
	h. Variable speed pumps	2	
	i. Number of stations		
	1) 2-4	2	
	2) 5-10	4	
	3) 10>	5	
	j. Alarm systems:		
	Flow	1	
	Personal safety	1	
	Telecommunications	1	18

5	Flow Measurement in Collection System	2	2
6	Siphons	2	2
7	Combined Sewers	3	3
8	Force Main	2	2
9	Chemical Additions		
	a. Hypochlorite	2	
	b. Gas	5	
	c. Other (explain)	2	9
10	Oldest Part of System		
	a. Prior 1940	3	
	b. Prior 1960	2	
	c. Prior 1980	1	
	d. New	0	3
11	Mechanical Equipment		
	a. High pressure jet truck	3	
	b. Mechanical rodder	3	
	c. Bucket machine	3	
	d. Combination vacuum/jet truck	3	
	e. Closed circuit TV equipment	3	
	f. High pressure grouter	3	
	g. Other (be specific)		

Maximum 15 points allowed  
for this section.

Grade I Collection System: All systems for a total point value of 1 - 20

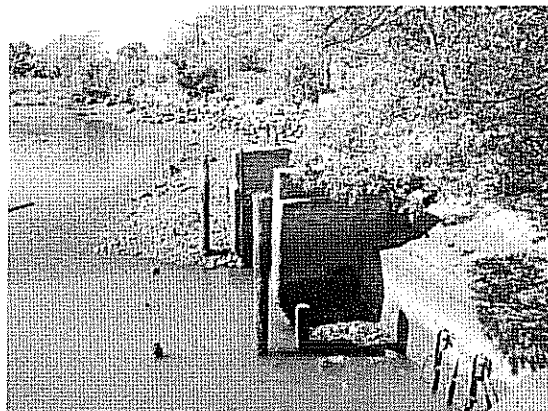
Grade II Collection System: All systems for a total point value of 21 - 39

Grade III Collection System: All systems for a total point value of 40 - 55

Grade IV Collection System: All systems for a point value of 55 or greater



# Combined Sewer Overflow Guide for City Employees



*Bridgeport CSO Location*

Portions of the Bridgeport sewer system are over 100 years old. When they were built, a single pipe carried both sewage and storm water. This existing system is called a combined sewer system. During a heavy rainfall or when there is significant snow melt, large volumes of rainwater or melted snow enter the sewers. Instead of overloading the City's wastewater treatment plants, the overflow is discharged directly into waterways at specific permitted combined sewer overflow (CSO) locations in the Bridgeport area.

## How does this impact you?

When there is excessive rainfall, wastewater sometimes overflows into our harbors, rivers, brooks and creeks. These overflows can contain bacteria, raw sewage, and other pollutants which can impact public health, aquatic life, and recreational use of these waters.

## What All City Employees Can Do to Prevent CSOs and Contaminated Stormwater

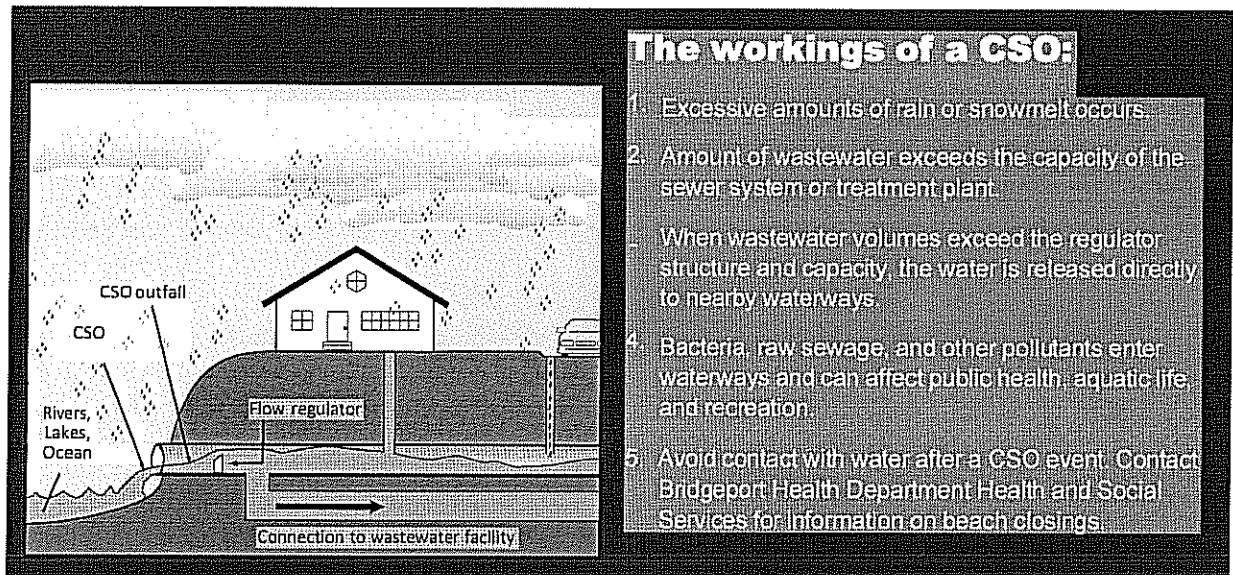
People affect stormwater and CSO discharges! Here are some ways you can help:

- **Conserve water:** Using less water in your office means less flow to the sewer. Remember to turn off the faucet. Report any leaking faucets or running toilets to the appropriate contact in your office or place of work. A slow drip can waste 50 gallons of water per day! Using less water in your office means less water in the sewer system, making overflows during wet weather less likely.
- **Good Housekeeping:** Don't be a litterbug! Proper disposal of waste ensures that it won't make its way into waterbodies. Recycle whenever possible, in line with the City's sustainability initiative.
- **Support local efforts:** Support the efforts of the WPCA and your local government to control CSOs. Understand that there are many ways you can become involved in protecting water quality.
- **Volunteer:** Become involved with the efforts of local groups such as Save the Sound and the Pequonnock River Initiative.
- **If you see something, say something:** Report areas with flooding, clogged storm drains, or garbage to the Public Facilities Administration. Removal of garbage prevents it from entering the sewer system and making its way to waterbodies during storm events.
- **Pay Attention to Signs!** The City of Bridgeport has signs at its CSO locations. If you notice flow at these locations during dry weather, please

contact the WPCA.

- **Automotive Care:** Maintain City fleet vehicles in a CSO friendly manner! Wash them at a commercial car wash or City provided facility whenever possible. This will minimize the amount of soapy water conveyed to local waterbodies. Be an advocate of proper disposal of waste! Recycle oil properly, and make sure it doesn't find its way into storm drains.
- **It's our city, we are all in this together!** Lead by example and spread the word. Tell your friends, neighbors, and coworkers what they can do to help.





## What is the Bridgeport WPCA doing to address CSOs?

The Bridgeport WPCA has embarked on a multi-year program that will bring the entire combined sewer system into compliance with federal requirements including implementation of these "nine minimum controls":

- Proper operation and regular maintenance programs for the sewer system and the CSOs
- Maximum use of the collection system for storage
- Review and modification of pre-treatment requirements to assure CSO impacts are minimized
- Maximum flow to wastewater treatment plants for treatment
- Prohibition of CSOs during dry weather
- Control of solid and floatable materials in CSOs
- Pollution prevention
- Public notification to ensure that the public receive adequate notification of CSO occurrences and impacts
- Monitoring to effectively characterize CSO impacts and the effectiveness of CSO controls

The Bridgeport WPCA has already prepared an updated Long-Term Control Plan (LTCP) that identifies specific projects designed to achieve the objectives outlined in these nine minimum controls and reduce the overall occurrence of these CSOs. The LTCP includes the use of green infrastructure to prevent or delay stormwater from entering the system in the first place. Bridgeport is also conducting water quality sampling to collect baseline data which will be used to track our progress.

## Who should you contact?

If a CSO discharge occurs, you are encouraged to contact one of these agencies by phone or by regular mail if you have any questions or concerns about a CSO occurrence:

**Connecticut Department of Public Health**  
410 Capitol Avenue  
Hartford, CT 06134  
Phone: (860) 509-8000

**City of Bridgeport**  
Department of Health & Social Services Administration  
City Hall Annex, 999 Broad Street Bridgeport, CT 06604  
Phone: (203) 576-7474

**City of Bridgeport Public Facilities Administration**  
999 Broad Street, 2<sup>nd</sup> Floor  
Bridgeport, CT 06604  
Phone: (203)-576-7130

**Connecticut Department of Energy and Environmental Protection**  
79 Elm Street  
Hartford, CT 06106-5127  
Phone: (860) 424-3000

**City of Bridgeport – Water Pollution Control Authority**  
695 Seaview Avenue  
Bridgeport, CT 06607  
Phone: 203-332-5550  
For sewer emergencies, call 203-576-7171



# Bridgeport Water Pollution Control Authority's Long-Term Control Plan

## Plan Will Limit Sewer Overflows

The Bridgeport Water Pollution Control Authority (WPCA) has embarked on a multi-year program that will bring its 100-year old combined sanitary and storm water sewer system into compliance with new state and federal requirements.

When the system was built, a single pipe carried both sewage and storm water. During a heavy rainfall or when there is a lot of melted snow, too much water gets into the sewers. Instead of following its intended path to the wastewater treatment plant, the overflow goes directly into local rivers, creeks, and Long Island Sound.

In September 2010 WPCA submitted a Draft Long Term Control Plan to the Connecticut Department of Energy and Environmental Protection (CTDEEP) to reduce the amount of sewer overflows into local waters. This plan was required by the U.S. Environmental Protection Agency and the CTDEEP.

**WPCA Capital Costs for  
Long Term Control Plan Alternatives**

Alternative	Capital Cost
Green Alternatives (includes rain barrels, rain gardens, cisterns, green roofs, porous pavement)*	\$0**
Raising Weirs / Closing Outfalls*	Negligible Cost* (per weir/outfall)
Remote Monitoring System*	\$2.5 Million
Conveyance Tunnel with Treatment	\$425 Million
Underground Storage Tanks	\$550 Million
Full Sewer Separation	\$560 Million
Total Cost of the Comprehensive LTCP Program	\$385 Million

\* These alternatives, standing alone, cannot achieve full compliance with CTDEP requirements.

\*\* Costs primarily borne by private developers /property owners who modify existing drainage systems

+ Cost comes out of existing WPCA Operations & Maintenance budget.

The plan encourages voluntary use (by building owners) of green alternatives to manage their storm water. Green alternatives include installing rain barrels and gardens, cisterns, green roofs and porous pavement surfaces.

The proposed Long-Term Control Plan recommended these improvements:

- Limited separation of combined sanitary and storm water piping
- Raising regulator weirs and closing outfalls (pipes or culverts) that release sewage and storm water into local creeks and rivers during heavy storms
- Underground storage tanks and a conveyance tunnel to treat overflows
- Increased monitoring of sewer overflows and additional water sampling in rivers, creeks, and Long Island Sound
- Increased public communication when sewage overflows occur

It will take at least 30 years to implement all the projects detailed in the Plan.

Hard copies of the Long Term Control Plan are available at the WPCA office, 695 Seaview Avenue, Bridgeport. Discussion of the plan has previously occurred at Bridgeport City Council meetings and will resume in the future.

For more information contact WPCA at (203) 332-5550.



**Water Pollution Control Authority**

695 Seaview Avenue

Bridgeport CT 06607

Phone: (203) 332-5550

## What is the Bridgeport WPCA doing to address CSOs?

The Bridgeport WPCA is embarking on a multi-year program that will bring the entire combined sewer system into compliance with federal requirements including implementation of these "nine minimum controls":

- Proper operation and regular maintenance programs for the sewer system and the CSOs
- Maximum use of the collection system for storage
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- Maximum flow to wastewater treatment plants for treatment
- Prohibition of CSOs during dry weather
- Control of solid and floatable materials in CSOs
- Pollution prevention
- Public notification to ensure that the public receive adequate notification of CSO occurrences and impacts
- Monitoring to effectively characterize CSO impacts and the effectiveness of CSO controls

The Bridgeport WPCA is in the process of preparing an updated Long-Term Control Plan (LTCP) that will identify specific projects designed to achieve the objectives outlined in these nine minimum controls.

## Who should you contact?

If a CSO discharge occurs, you are encouraged to contact one of these agencies by phone or by regular mail if you have any questions or concerns about a CSO occurrence:

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695 Seaview Avenue  
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Phone: 203-332-5550  
For sewer emergencies, call 203-576-7171

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410 Capitol Avenue  
Hartford, CT 06134  
Phone: (860) 509-8000

### City of Bridgeport

#### Department of Health & Social Services

##### Administration

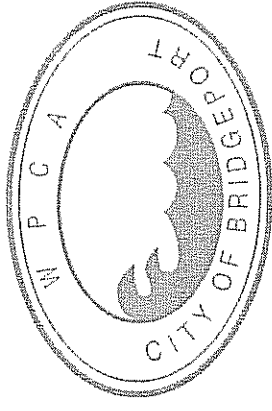
City Hall Annex, 999 Broad Street  
Bridgeport, CT 06604  
Phone: (203) 576-7474

### Fairfield Health Department

Sullivan Independence Hall, 725 Old Post Road  
Fairfield, CT 06824  
Phone: 203-256-3020

### Connecticut Department of Environmental Protection

79 Elm Street  
Hartford, CT 06106-5127  
Phone: (860) 424-3000

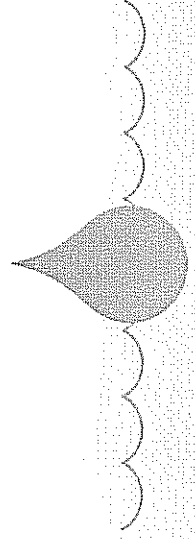
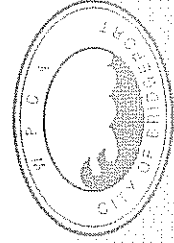
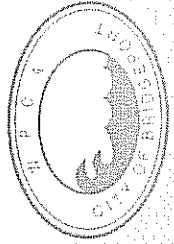


# Greater Bridgeport Combined Sewer Overflow

## A Guide for Residents

Portions of the Bridgeport sewer system are over 100 years old. When they were built, a single pipe carried both sewage and storm water. This existing system is called a **Combined Sewer Overflow (CSO)** system. During a heavy rainfall or when there is significant snow melt, too much rainwater or melted snow gets into the sewers. Instead of following its intended path to the wastewater treatment plant, the overflow goes directly into waterways in the Greater Bridgeport area.

## How does this affect you?



## MANHOLE INSPECTION

LOCATION: \_\_\_\_\_

DATE: \_\_\_\_\_

\_\_BRICK

\_\_PRE-CAST

\_\_LINED

### CONDITION

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### INVERT CONDITION

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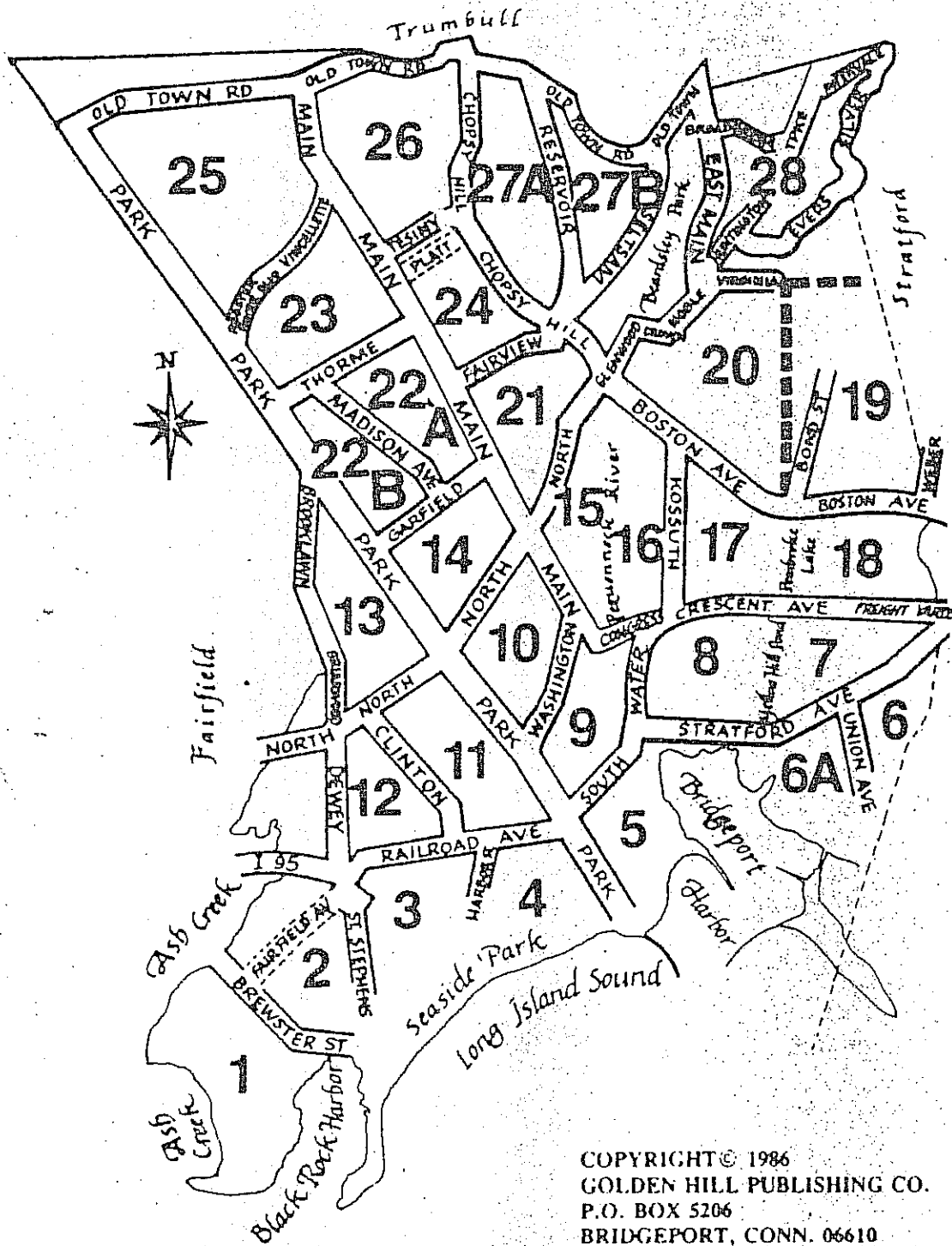
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OVERALL RATING \_\_\_\_\_ (1-5 ONE BEING THE WORST)

INSPECTED BY: \_\_\_\_\_



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